



DENVER

COMMUNICATIONS ENGINEERING SERVICES

SEATTLE COST STUDY & MODEL

SEATTLE FOREBEARANCE STUDY

TABLE OF CONTENTS

I. EXECUTIVE SUMMARY

II. STUDY OBJECTIVES

III. ESTIMATING METHODS AND ASSUMPTIONS: FIBER-OPTIC PATH COSTS

IV. ESTIMATING METHODS AND ASSUMPTIONS: EQUIPMENT COSTS

V. COST MODEL

VI. BUILD TIME

VII. ACCESS VIA WIRELESS FACILITIES

VIII. ESTIMATED DS1 EQUIVALENT CAPACITY OF EXISTING CAP SYSTEMS

APPENDICES

- A. Sources of Data and Samplings Methods
- B. Path Costs
- C. Equipment Costs
- D. Total Costs
- E. Qualifications for POWER Engineers, Inc.

EXECUTIVE SUMMARY

POWER Engineers, Inc. (PEI) has developed a cost model for the purpose of estimating the construction and equipment costs for Competitive Access Providers (CAPs) in the Seattle, Washington MSA, to displace existing U S WEST Communications (U S WEST) hi-cap services (DS1 and greater bandwidth). The model estimates the cost of extending fiber-optic cable links from existing CAP backbone fiber routes to current U S WEST hi-cap customer locations (locations), based upon the airline distance from the location to the nearest CAP route. The model also includes the equipment and labor costs to terminate circuits at the locations, duplicating the service level now provided by U S WEST.

Major cost elements in the model are:

- Structure costs - the aerial line or buried conduit path for the cable, including the path inside the customer building.

- Access costs - to access the CAP fiber cable and the customer building.

- Cable costs - including installation from the CAP fiber route to the equipment room of the customer building.

- Equipment costs – including installation at the customer location plus incremental items needed at the CAP hub.

The model provides “broad-gauge” costs, sufficiently accurate for capital budget planning for constructing connections to a large number of locations, but not suitable for site specific costs.

To develop the model, costs were divided into distance sensitive elements, such as the length of the path to each location, and non-distance sensitive elements (at the distances assumed in this study), such as transmission equipment. Distance sensitive cost factors were developed by grouping locations into distance bands by airline distance from the nearest CAP fiber route. Then a random, statistically valid sample of locations in each band was physically surveyed in the field. Probable paths were determined and distances were measured for each sample. Physical factors which contribute to costs were noted, such as type of structure (aerial or below ground), surface or aerial line conditions, geographical barriers, etc. Detailed cost estimates were developed for each sample location. Average path costs per location by distance band for the locations in the sample were computed for application to the total population of U S WEST service locations. Path costs were calculated on the basis of a single entrance path to each customer location.

Non-distance sensitive cost algorithms, consisting of equipment costs including installation, were developed on the basis of the type and number of services provided. Automatic alternate route protection was assumed where service requirements exceeded

three DS1's. This provides switching to an alternate path on the backbone fiber ring, should a failure occur on the primary backbone path.

Cost Model results are summarized in the table below:

DISTANCE BAND (IN FEET) FROM NEAREST CAP FIBER ROUTE	NUMBER OF LOCATIONS WITHIN THE BAND	% OF TOTAL LOCATIONS WITHIN THIS BAND	AVERAGE COST PER LOCATION	TOTAL COST FOR ALL LOCATIONS IN THE BAND
0 TO 1,000	1,498	59.52%	\$30,699	\$45,986,816
1,001 TO 2,000	357	14.18%	\$46,848	\$16,724,601
2,001 TO 4,000	343	13.63%	\$60,840	\$20,868,280
4,001 TO 9,000	319	12.67%	\$82,242	\$26,235,232
ALL LOCATIONS	2,517	100%	\$43,629	\$109,814,929

Estimates of construction time per location were also developed, assuming an accelerated build program. The average time per location for physical construction is estimated to be two weeks, based upon a major build in which activities such as engineering and permitting periods for numerous locations are performed in a parallel, overlapping sequence.

It is estimated that a complete buildout to reach all 2,517 locations in the study would require 24 to 36 months. It should be noted, however, that 60% of U S WEST customer locations in the Seattle area lie within 1,000 feet of an existing CAP fiber route, and 44% lie within 500 feet. A build which targeted the 60% of locations within 1,000 feet is estimated to require no more than 18 to 24 months and a build to reach the 44% of locations within 500 feet could be accomplished within 12 to 18 months.

An assessment was also made of the wireless alternative for providing hi-cap services. Wireless service is a realistic option for DS1 and DS3 services to locations which lie more than a mile from the nearest backbone route.

In addition, an estimate of the present capacity of CAP backbone routes and laterals to customer locations was developed, and stated in terms of DS1 equivalent's. This is described in detail in Section VIII below.

PEI compared these estimated capacities to the hi-cap service volumes presently provided by U S WEST in the Seattle area. Specifically, PEI calculated that the CLEC route which passes the greatest volume of U S WEST hi-cap services would need an equivalent DS1 capacity of less than 2,000 to entirely absorb all U S WEST services in the area, versus an estimated present capacity for the CLEC route of more than 77,000.

PEI is led to conclude that there is more than enough capacity in the sum of the present CLEC fiber routes in the Seattle Metro area, to completely absorb the volume of hi-cap services presently served by U S WEST.

II

STUDY OBJECTIVES

A. Fiber-Optic Cable Costs:

Develop a broad-gauge engineering assessment of the costs for Competitive Access Providers (CAPs) in the Seattle, Washington MSA, to displace existing U S WEST hi-cap services (DS1, DS3, OC-3, OC-12, OC-48) by extending fiber-optic cable links from existing CAP fiber routes to current U S WEST hi-cap customer locations (locations). This includes the provision of automatic, alternate routing where service requirements exceed three DS1's.

B. Build Time:

Estimate the amount of time required to build the lateral connections described above, assuming an "accelerated" emergency scheduling condition such as might exist following a natural disaster.

C. Capacity of CAP fiber routes.

Develop an estimate of the capacity of the CAP routes, expressed in terms of DS1 equivalent circuits.

D. Wireless Transmission:

Review the potential for CAPS to utilize wireless transmission as an alternative means of providing hi-cap services.

III

ESTIMATING METHODS AND ASSUMPTIONS - FIBER-OPTIC PATH COSTS

TASK:

Develop a broad gauge engineering assessment of the costs for the path from the nearest CAP fiber cable route to the equipment room at the customer location.

DESCRIPTION:

These are the costs from each location to the nearest access point on the nearest CAP fiber route. This includes the cost of the structure which carries the fiber-optic cable, the cost of the cable, the cost of accessing both the CAP fiber route and the building at the customer location, the cost of inside wiring at the location, and the cost of placing and splicing the cable.

The cost of the structure is the largest cost element. Many variables determine structure costs, the most significant being the distance and the type of structure. Structures assumed in this study were either aerial (typically joint use on an existing aerial line), or below ground in conduit.

Unit costs (\$/ft) for aerial structure vary based upon whether there is an existing, joint use line with adequate clearance to add a fiber cable, or whether the line must be reinforced or extended, or be newly built. Variables which drive unit costs for below-ground conduit include the type of surface (e.g. asphalt, concrete, sod, etc.), the type of soil (e.g. sand, calciche, rock, dirt, etc.), the method of construction (e.g. trenching, boring, plowing, etc.), the depth at which the cable is to be placed, the location of existing buried utilities (sewer, water, gas, etc.), backfill requirements, restoration requirements, the need for additional utility holes to access backbone routes, permitting costs, and safety related costs. Other impacts, such as the need to perform work during non-peak traffic hours, may apply, depending on the jurisdiction and the season.

Fiber cable costs were based on length calculations, described below, multiplied by a cost per foot loaded to include estimated costs of installation.

ASSUMPTIONS:

It was assumed that CAPs would be unlikely to extend fiber to locations beyond 9,000 feet from backbone routes (as the crow flies), since costs increase with distance and there are few such locations. Therefore locations beyond 9,000 feet from the nearest backbone route were excluded from the study.

Building entrances – it was assumed that each location will require a new building entrance, whether aerial or below ground.

Inside wiring – it was assumed that the cable would be extended beyond the building entrance a distance equal to half the length plus half the width of the building. For multistory buildings it was assumed that the cable would need to be extended to half the total building height (the name of the customer and the in-building location was not available to PEI). Estimated costs for the cable and support structure inside the building were included.

Path types – it was assumed that the mix of aerial versus buried plant identified for locations sampled, could be applied to the entire population of customer locations, again, by distance band.

Depths for below ground paths – a depth of four feet from the surface was assumed.

Joint paths for adjacent locations – a portion of most paths from backbone routes to locations are shared between adjacent locations, or among multiple locations that lie near a common path. It was assumed, on the basis of the experience of a knowledgeable local contractor, that on average, path costs developed on a “stand-alone” basis for each location, should be reduced 40% to reflect this cost sharing effect, to reach a true average path cost per location.

Access to backbone routes – for paths sampled in which the backbone route segment to be accessed was below ground, it was assumed that an additional utility hole would be required if there were no observable access points within 500’ of the point on the backbone fiber nearest the probable path to the location. For access to aerial backbone route segments for locations sampled, it was assumed that sufficient slack had been placed to allow placement of a new aerial closure, if one did not exist within 1,000 feet of the point on the backbone fiber route nearest the probable path to the location.

Utility holes – for some locations access to the existing CAP fiber route is readily available via existing utility holes or aerial splice closures. However, in many cases access would require placing a new utility hole. It was assumed that the proportion of locations in the sample which required additional utility holes or aerial closures could be applied to the entire population of customer locations, again, by distance band.

Fiber-optic cable – it was assumed that 24-fiber count, single mode fiber-optic cable would be used to connect the locations to the CAP fiber routes. This size provides adequate facilities for the four-fiber connections necessary for automatic alternate routing, plus growth. A contractor who performs work for several CAPs advised that this is a typical size and type used for this purpose. Note that frequently, a larger size may be used for some distance from the backbone route, when several customers are located in adjacent quarters. Because the installed unit cost (cost per foot per fiber) drops as size increases, actual cable costs per customer may be lower than those estimated.

ESTIMATING PROCEDURE:

Structure Costs:

It was noted that algorithms could readily be applied to the entire population of locations in U S WEST's data base, which would identify the airline distance from each location to the nearest CAP fiber cable route. PEI elected to develop a cost estimating model related to this airline distance, which could then be readily applied to the entire database. Even though actual path lengths vary significantly from the airline distance, by costing a statistically valid number of randomly selected sample locations in each band, an average path cost by band can be established with sufficient accuracy for overall budget planning.

An experienced contractor developed the structure estimates by preparing a construction bid for each sample location.

The process was as follows:

1. U S WEST's geographic databases of hi-cap service locations and CAP fiber-optic cable routes were provided to POWER Engineers (PEI). Data included the address and the number and type of hi-cap services by location, and the running lines of CAP "backbone" fiber routes.
2. PEI distributed the locations into distance bands from the nearest CAP fiber route, e.g. 0 to 1,000 ft; 1,001 to 2,000 ft, etc., using geographic information systems (GIS) software.
3. It was observed that about 60% of the locations were within 1,000 ft of a CAP fiber route, and that the population fell rapidly with distance, fewer than 13% being beyond 4,000 ft. This led PEI to set the bands as follows:
 - 0 to 1,000 feet
 - 1,000+ to 2,000 feet
 - 2,000+ to 4,000 feet
 - 4,000+ to 9,000 feet.
4. A first approximation was made of path cost variations within each band for the purpose of setting initial sample size. This was based on experience in Phoenix plus estimated variations in distance within the band from the location to the nearest access point on the nearest CAP fiber route, and from the expected variation in unit costs for the different types of construction and terrain.
5. The rough estimate of potential cost variation by band was used to determine the number of sample locations to be studied within each band, to achieve a 95% confidence level for the average path cost within the band. The rough estimate was later validated and refined, based on cost variations observed among the sample locations.
6. The appropriate number of sample locations was chosen in each band using a random process.
7. Field visits were made to each location in the sample to obtain site specific data: Distance along a reasonable path from the property line of the location to the nearest access point on the nearest CAP fiber route (see assumptions, above).

Type of access to backbone route - would a utility hole need to be added?

Distance from the property line to the nearest building wall at the location.

Distance from the building wall to the equipment room was estimated to be half the width of the building.

Type of structure

Type of surface conditions for cases involving conduit

Type of building entrance (aerial or conduit)

8. A site-specific cost estimate for the path structure, excluding cable but including the cost of accessing the CAP fiber route and the customer building, was obtained from a qualified local contractor for each of the sample locations. The contractor also estimated inside wiring costs for each sample location.
9. The structure cost element from the CAP fiber to the building entrance was reduced 40% to reflect joint or common path sharing among adjacent locations.
10. The cost of the fiber-optic cable, loaded for installation and splicing, was calculated for each sample location, based on the unique total path length for the location.
11. A total path cost for each sample in each band was calculated by summing all the path cost elements.
12. Statistical indicators (average, standard deviation, median, and total variation) were determined for total path costs within each band and the initial estimates of sample size by band were validated.

The sample locations, grouped by distance band, and the specific path cost estimates for each, are displayed in the Appendix, Section B. PATH COSTS. This Section also provides the average path cost for each band. These average path costs by band are applied to all locations, in the attached Cost Model, displayed in the Appendix, Section D., TOTAL COSTS.

IV

ESTIMATING METHODS AND ASSUMPTIONS - EQUIPMENT COSTS

TASK:

Develop an economical method of estimating costs for capital budgeting purposes, for the equipment required to provide the indicated service, using fiber-optic cable as the transmission medium.

DESCRIPTION:

This includes the equipment at the customer location required to provide the service, plus the incremental equipment at the CAP hub necessary to interface with the equipment at the customer location.

For each of the service types under consideration, equipment costs for the first circuit typically include "common equipment" which enable a number of similar circuits to be provided quickly, and at little additional cost. For DS-1 service, for example, the cost to provide 24 DS1 circuits over fiber cable is very little more than the cost to provide a single DS1 circuit, because the same amount of common equipment must be installed in either case.

Equations to describe these costs take the approximate form of the equation for a straight line, $y = mx + b$, for a range of circuit volume (groups of twenty-four in the case of DS1 circuits). In the DS1 example,

y = the equipment costs at the location

b = the cost of the common equipment necessary to support a group of up to 24 DS1 circuits

m = the incremental cost per DS1, and

x = the number of DS1 circuits provided

The factors " m " and " b " change for various ranges of volume of DS1 circuits (similar for other bandwidths), requiring that different formulas be chosen based upon the circuit volume. This is because as circuit volume increases, it becomes economic to utilize higher capacity equipment, with different unit cost characteristics.

Although single DS1 circuits, for example, can be provided without placing the common equipment required to support twenty-four DS1's, this is rarely done because the "break even" point is very low. When growth occurs, per circuit costs on the "one-at-a-time" basis far exceed the costs of planning for groups of twenty-four.

Equipment is also required at the CAP hub to interface with each circuit installed at the customer premises.

PEI developed the formulas to fit each circuit type and volume by obtaining equipment costs from manufacturers and by estimating loadings for installation with the aid of a consultant with expertise in the field.

ASSUMPTIONS:

PEI assumed that the competing carrier(s) would be adding to an existing SONET system, in which case initial capital outlays and early-year administrative expenses could be minimized by adding point-to-point systems sized for the initial requirement. For instance, in the case of an initial order for three DS1 channels, only a fiber driver transmit/receive plug set (the point-to-point Quad DS1 system) need be added, at an incremental additional cost.

PEI is aware that carriers sometimes place a high capacity SONET system, such as an OC3 (84 DS1's) or OC12 (336 DS1's) at the customer premise upon initial installation of a small number of lower rate channels, such as DS1's. These require a node, such as an add-drop multiplexer to "drop" the required number of DS1 channels from the high capacity system at the location. This increases initial capital outlays and administrative costs (the costs to manage the channels dropped from the system via the multiplexers) but reduces future capital expenditures if the customer adds circuits.

However, the minimum initial cost approach assumed by PEI is also taken. This involves placing a point-to-point system (such as the Quad DS1 system for small numbers of DS1 channels) which do not require multiplexers at the customer location. Placing a T-1 or higher rate add-drop multiplexer for these low volume DS1 requirements would add approximately 30%.

Detailed assumptions were as follows:

1. A Central Office or equivalent is in place and contains the higher order DS1 to OC-n equipment for distribution to a customer. The higher order transmission equipment is assumed to be in a "protected ring" configuration
2. The service is delivered to the customers premise via fiber cable. Four fibers will be assigned per system when service levels exceed three DS1's, two primary and two alternate route fibers. Automatic alternative route switching equipment is included, again, when service levels exceed 3 DS1's at a given location. All equipment will be protected against system card failure.
3. The loaded cost in the "hub" or C.O. is defined as the incremental equipment added to an existing system to facilitate the service; e.g.: Tx/Rx fiber cards, fiber jumpers, jack and frame interconnect, etc.
4. From one to twelve DS1 circuits are delivered via a fibered, Quad DS1 system, which delivers four circuits per Quad DS1 system.

5. When thirteen to 56 DS1's are required, a fibered DS3 multiplexer will be placed. The pricing shall include hub transceivers and customer premises common equipment plus incremental DS1 cards at the customer location up to a maximum of 28 DS1's per DS3 system.
6. When more than 56 DS1's are required, a fibered OC-3 system shall be placed. Pricing shall include hub transceivers and customer premises common equipment, plus incremental DS1 cards at the customer location up to a maximum of 84 DS1's per OC-3 system.
7. When a mix of DS1 and DS3 services are required, an OC3 or higher rate system will be placed. The pricing shall be incremental for each DS1 and DS3.
8. DS3 only: from one to three DS3's - an OC3 system will be placed. Pricing shall include hub transceiver plus customer premises common equipment, plus one DS3 card per circuit, to a maximum of three per system.
9. DS3 only: from four to twelve DS3's - an OC-12 system will be placed. Pricing shall include hub transceiver plus customer premises common equipment, plus one DS3 card per four DS3 circuits, up to a total of twelve DS3's per OC-12 system.
10. DS3 only: more than twelve DS3's - an OC-48 system will be placed. Pricing shall include hub transceiver plus customer premises common equipment, plus one DS3 card per four DS3 circuits, up to a total of 48 DS3's per OC-48 system.
11. When an OC3 or higher bandwidth service is required, a one-to-one configuration will be added. EG: an OC3 driver at the hub and an OC3 Tx/Rx at the customer premise.
12. When a higher order service is required (OC-3, OC-12, etc.), the hub location will always contain a system with enough bandwidth to accommodate the customer via system cards. EG: an OC-3 requirement will be fed with an OC-12 system, an OC-12 requirement with an OC48 system.
13. The distance from hub to customer is short, less than 10,000 ft. All distribution cable is in place, terminated at distribution panels, and tested for performance at the hub and customer locations.
14. No Wave Division Multiplexer or any other "fiber bandwidth gaining" device shall be used to serve the customer. All fiber drivers shall be LED (Light Emitting Diode), low power, 1310 nm.
15. All pricing is loaded and consists of the following:
 - a. Equipment - customer location - shelf, common cards with protection, cabling, customer electrical interface, fiber jumpers, power and LED drivers. If service requirements exceed three DS1's, high speed interface cards and high speed switching cards are included for automatic route protection switching.
 - b. Equipment - hub location - system cards, fiber jumpers.
 - c. Engineering - both locations. Includes drawings, site survey, records, and assignments.
 - d. Installation - both locations. Includes unpacking, inventory, inspection, mounting, cabling (copper and fiber), cable continuity, system power up, updating records and cleanup of area.

- e. Test and turn-up - both locations. Includes all system operations, alarms, end to end performance and interconnect to demarcation.
 - f. Maintenance - a factor is added to cover call outs and routine updates.
 - g. Performance Monitoring - a factor is added to support the addition of the service to the Network Operations Center.
 - h. Taxes and transportation are included in the loaded cost.
16. All customer premise equipment is AC powered. Uninterrupted Power Source (UPS) is not included.
 17. No particular vendor is specified in this study. All pricing was derived from list prices with an average 15% (fifteen percent) discount, multiplied by a loading factor for installation. This method offers a median installed cost which may vary by 5%, depending on local factors. To narrow the margin, several vendors have been researched.
 18. All customer premise equipment will be placed in an environmentally controlled location.
 19. All customer premise equipment will be slave timed by the hub, referenced to a stratum one timing source.

ESTIMATING PROCEDURE - EQUIPMENT:

Methods for serving each type, volume and mix of services were examined.

1. Equipment prices, loaded for installation, etc., were developed, referencing a number of vendors.
2. Equipment configurations for each type, combination, and volume of service types were determined.
3. Pricing algorithms were developed for each type, combination and volume of service types.
4. Logic statements were written in a commercially available software, to allow the software to select the proper algorithm for the service required, at each customer location.
5. The algorithms were applied to the data for each location to determine the specific cost for each location.
6. These equipment costs were then added to path costs to estimate the total cost for each customer location.

The resulting equipment cost formulas were applied to all locations, along with logic functions to select the appropriate formula for each combination of service types and volumes. These formulas are described in detail in the Appendix, Section C. EQUIPMENT COSTS.

V

COST MODEL

The cost model is a programmed spreadsheet in a commercially available software (Microsoft Excel®). The procedure used is as follows:

1. All Seattle Metro hi-cap customer locations in U S WEST's data base were distributed into distance bands from the nearest CAP fiber-optic cable route, as described in Section III above, and entered into the spreadsheet.
2. Path costs were estimated by applying the average path cost for each band, determined as described in Section III, to all locations in the band.
3. Equipment cost algorithms were entered for each type, mix, and volume of services.
4. Logic statements were programmed to drive the software to select the proper equipment cost algorithm to serve each customer location, based on the service requirements at the location. This yielded unique equipment costs by location.
5. Path and equipment costs were summed for each location and then by band.

The resulting costs are summarized in the Executive Summary above.

Costs for all locations are provided and summarized by band in the Appendix, Section D.

TOTAL COSTS.

VI

BUILD TIME AND BUILD STRATEGIES

DEFINITION:

The time required to build facilities and turn up service to a customer location is defined for this purpose as beginning at the time engineering is commenced, until service is turned up. This includes the time required to do the engineering, acquire digging permits and other rights-of-way, build the structure, install and terminate the cable, test the cable; and install, test and turn-up the equipment, and perform any hub or distant end functions which may be required. It is assumed that a suitable, environmentally controlled equipment space is available at the customer location.

The timetables outlined below are in the context of an accelerated build schedule. This means parallel activities for many different locations, including approval processes and time intervals for permits to use the public rights-of-way and other right-of-way acquisition, for traffic control measures, etc. It also contemplates normal concerns for the economics of construction - a balance between construction speed (the number of crews which can be efficiently managed simultaneously) and construction costs (use of manageable number of efficiently sized construction crews). If there were a crisis or emergency condition in which the continuity of data communications were in jeopardy, the time to build could be shortened from the intervals outlined below, at some cost penalty.

TIME REQUIRED TO BUILD TO A SPECIFIC LOCATION - VARIATIONS:

The time required to build to different sites may vary significantly. Differences in build times are driven primarily by variations in the paths, such as length, digging conditions, etc. However, given a large number of sites to build to, an average time of two weeks per site can be managed economically in the Seattle area. This is based on the experience of a qualified contractor, and assumes that engineering, permit acquisition times, blue stakes intervals, etc. become largely transparent because they are performed in parallel sequence for other work at numerous simultaneous locations.

Applying more labor and equipment can shorten this time, but unit costs rise because of inefficiencies related to crowded work site conditions and the number of construction crews (simultaneous different construction locations) which can be effectively managed. Many factors that influence build time are beyond the control of the building party. These include governmental intervals for issuance of digging permits, Blue Stakes intervals (location of existing utilities), time required by owners of existing utilities to rearrange or safeguard them, limitations imposed by governments on construction activity in order to maintain public safety and convenience, etc.

The customer locations in the U S WEST database are widespread, but large concentrations of them are located along major business corridors, with 60% of them within 1,000 feet of

an existing CLEC backbone route. Given traffic flow and other public safety and convenience factors, it is estimated that a major construction effort could result in reaching all U S WEST service locations within the 9,000 ft study range in 24 to 36 months.

More focused approaches, such as a building program targeted at locations very near existing CLEC backbone routes would require significantly less time. A build focused on the sixty percent within 1,000 feet, mentioned above, is estimated to take 18 to 24 months. Furthermore, based on data from the sample locations visited for path cost calculations (see Section III above) 44% of locations lie within 500 feet. PEI estimates that a build to this large proportion of locations nearest to existing CLEC routes could be accomplished within 12 to 18 months.

It is expected that the first six weeks to two months of a major building program would be absorbed in the initial acquisition of rights-of-way, digging permits, locating activity and traffic control planning. Beyond this period, these activities for the next sets of locations can be pursued in parallel, during the same time that physical construction to the initial sites is underway.

BUILD STRATEGIES:

Equipment costs are proportional to the volume of services at a location, and therefore are also proportional to revenue potential. Path costs, on the other hand, are a function of distance and surface conditions, almost independent of the volume of services (and thus potential revenue). Net operating income could therefore be optimized by focusing on the largest service volume customer locations with the lowest path costs, generally those nearest to the existing CAP fiber routes. In fact, it is reasonable to assume that the layout of the existing CAP routes was developed to minimize the total distance to the maximum number large service volume customer locations.

A likely CAP build strategy would appear to involve several elements, all aimed at maximizing the number of services provided (revenue) while minimizing the total path distance (cost). Such a strategy could be focused on the following locations:

Locations with high service volumes near the existing CAP routes. (Note that 60% of U S WEST's Seattle area customer locations are within 1,000 feet of these routes, and if the distance is extended to 2,000 feet, almost three fourths of locations are covered.).

Extend further from existing routes over time, prioritizing targets based on service volumes, distances and adjacent addresses (opportunity to share path costs with more than one location).

Extend long distances only when service volumes are high and path costs are low (aerial paths for fiber cable, or DS1/DS3 service provided via wireless).

VII

ACCESS VIA WIRELESS FACILITIES

Several transmission facility options are open to a CAP seeking to provide service to a customer. These include leasing a circuit from U S WEST, connecting the customer to the CAP fiber-optic ring via a fiber-optic cable, and connecting the customer to the CAP network (either to a point on or near a fiber ring, or directly to a CAP hub) via microwave radio. The wireless alternative requires a clear line-of-sight between antennas and/or reflectors on the route.

One and two DS1 capacity radio systems are economical (roughly \$20,000 per DS1 for spread-spectrum radio equipment, antennas and installation) and do not require the time-consuming licensing process. Transmission is relatively free from troubles induced by atmospheric disturbances at distances up to 6 miles, making them very attractive for rural and near-rural environments. However, obtaining zoning approval for the 2' to 3' dish antennas and the costs of antenna site leases can be a serious time and cost obstacle. These issues relegate the use of spread spectrum systems to locations at which circuits are not available for lease, or where new construction is required to furnish the service, and construction intervals are long and special charges apply.

Small numbers of DS1 circuits can also be provided by specialized common carriers, which lease 38GHz systems. Installation is typically prompt with a monthly lease cost near \$300 per DS1. Antennas may be as small as an 18" dish mounted inoffensively behind a camouflage screen on the side or roof of a building. However, as in the case of spread spectrum systems, this alternative is usually employed only for locations for which existing circuits are not readily available. The cost of leasing a single DS1 circuit from U S WEST is about \$350/month, and no zoning approvals, antenna site leases (sometimes required at both ends of the link), nor transmission power costs apply. Furthermore, the 38GHz systems are susceptible to rain fade during heavy thunderstorms. Route lengths are usually limited to about 3 miles (depending on terrain) to minimize atmospherically induced fade.

Digital radio systems are available for service at the DS3 and greater levels, but their cost characteristics and large antennas (serious zoning issues) suit them more for long-haul transmission than for local use, especially beyond the DS3 rate. These systems require FCC licensing on a per-link basis, which may involve significant lead-time.

The state-of-the-art in wireless systems is advancing rapidly. In addition to digital point-to-point radio, multipoint broadband radio systems now being developed (LMDS) promise economical alternative means of hi-cap transmission in the future.

To summarize, while leased circuits for small quantities of DS1's are often the economic choice in urban areas, and fiber cable is favored for its tremendous bandwidth capability; practical wireless alternatives are available, and are becoming increasingly competitive.

VIII

ESTIMATED DS1 EQUIVALENT CAPACITY OF EXISTING CAP SYSTEMS

ESTIMATED DS1 EQUIVALENT CAPACITY OF BACKBONE AND LATERAL ROUTES:

The estimated capacity of today's CAP backbone and lateral routes, assuming today's in-place technology at an assumed 20% deployment rate (see below) are as follows:

DS1 Equivalents, average backbone route: 77,400

DS1 Equivalents, average lateral route: 400

The estimated capacity of today's CAP backbone and lateral routes, assuming full deployment of today's in-place technology (every existing duct space full, transmission systems operating on every fiber) are as follows:

"Full capacity", using today's in-place technology, DS1 Equivalents, average backbone route: 387,000

"Full capacity", using today's in-place technology, DS1 Equivalents, average lateral route: 2000

PEI compared these estimated capacities to the actual number of U S WEST hi-cap service volumes along several of the CLEC routes which passed through areas with the highest density (equivalent DS1's per route mile) of hi-cap services presently provided by U S WEST, and found that there appears to be more than enough CLEC capacity at present to entirely absorb the current level of U S WEST services.

The following paragraphs provide the basis for these estimates, including a definition of the term "Full Capacity" as used above.

BACKGROUND: Fiber optic cable networks consist of high-capacity backbone routes, arranged into rings, with lateral routes extended from the backbone into customer buildings. The laterals are usually an extension from the backbone; but industry practice is moving toward arranging these laterals into a ring configuration, joined to the backbone at two points. The advantage of the ring is its capability to support simultaneous bi-directional transmission, which offers added reliability.

Creating a path, or structure to support fiber optic cables, whether aerial or below ground, is a relatively expensive and time consuming undertaking. Economic and physical factors

tend to drive carriers to provide sufficient cable spaces to last many years during the initial build. For example, for a below-ground route in an urban area, the majority of the structure cost is typically the opening and closing of the trench. Once the trench is open, placing four ducts rather than two adds relatively little cost. The initial structure is frequently considered to have "ultimate capacity" for the particular route segment.

Once the structure is in place, fiber cables can be added relatively easy, as needed. Similarly, because transmission equipment is relatively expensive, but scaleable, individual fibers are typically equipped with transmission equipment gradually, as circuit growth occurs.

Fiber optic technology is moving rapidly. Greater cable sizes (more fibers per sheath) and transmission systems with far greater equivalent DS1 capacity per fiber, are in development. Indeed, it is expected that OC192 systems, which offer four times the bandwidth per fiber of today's OC48 systems, is expected to be commercially available in 1999.

For the purposes of these estimates, PEI assumed the use of the cable sizes and transmission systems which have typically been placed during the 1994-1998 time frame. As a result, the true ultimate capacities of the routes are far greater than those estimated.

ESTIMATING PROCEDURE: The transmission capacity for a given route is a function of the number of fibers in the route, the capacity of the transmission equipment deployed, and the number of fibers needed to operate the equipment. Following the discussion above, PEI first estimated the "Full Capacity" of the route, an estimate based on the assumption that all spaces in the path structure have been filled with a standard sized cable, and that every fiber has been equipped with transmission equipment. PEI then applied an estimated "Deployment Factor" which reduced the Full Capacity to an estimated Present Capacity, based on the assumption that not every space in the structure is filled with cable, and that not every fiber in the cables placed to date have been equipped. The factor used was 20%, based upon PEI's observations and advice from contractors and vendors in the industry.

The estimating process was as follows, for each type of route, backbone and lateral:

1. Estimate the "Full Capacity" for each route type:

Estimate the average size of the path, "N" (number of cable spaces). This was considered to be the ultimate number of cables in the route.

Estimate the average sizes, "S" (fiber count), of the fiber optic cables.

Estimate the average transmission system capacity, "T" (in DS1 equivalents), and the number of fibers required per system, "F".

Estimate Full Capacity, "FC" of the route as follows:

$$FC = N * S * T/f$$

2. Estimate the present capacity, "C":

Apply the "Percent Deployment Factor", "%D", to the ultimate capacity estimate:

$$C = \%D * FC$$

DATA AVAILABLE: Technical data which describes the capacities of CAP fiber optic cable routes are not generally available in the public domain. However, based on commonly observed practices, standard fiber cable sizes, and commonly used transmission systems, PEI has developed estimates of the DS1 equivalent capacity of the "average" CAP fiber optic cable backbone and lateral route.

DS1 EQUIVALENT CAPACITY: Because the capacities estimated below are stated in terms of "Equivalent DS1 Capacity", it may be useful to briefly review the optical circuit hierarchy, beginning with the DS1. Each of the OC (optical circuit) systems utilizes one transmit fiber, one receive fiber, plus a backup pair of fibers:

- One DS3 system has the capacity of 28 DS1's
- One OC3 system has the capacity of 3 DS3's, or 84 DS1's
- One OC12 system has the capacity of four OC3's, or 336 DS1's
- One OC48 system has the capacity of four OC12's, or 1344 DS1's

Development is in progress for OC192 systems and for Wave Division Multiplexers (WDM's), both of which are expected to be commercially available within the next one to two years. Their initial capacities (initial in the case of WDM) in terms of DS1's are:

- One OC192 system has the capacity of four OC48's, or 5,376 DS1's
- One WDM enables four fibers to carry 80 OC48's, or 107,520 DS1's.

These and other future developments promise many-fold increases in the capacity of existing fiber cable networks.

Based on PEI's observations and advice from equipment vendors, PEI assumed the OC48 system to be the typical transmission system used on backbone routes for the purposes of developing estimated capacity. Similarly, the OC3 system was assumed for lateral routes.

AERIAL ROUTES: Both backbone and lateral routes may be placed on pole lines (aerial) or below ground. For aerial applications, common practice is to place one fiber optic cable initially, attached to a metallic strand which has the capacity to support up to three additional cables. The additional cables can be added in the future, as needed. Based upon PEI's field observations, this estimate assumes two fiber optic cables along each backbone aerial route, and one fiber cable on each aerial lateral.

UNDERGROUND ROUTES: Both backbone and lateral routes may be placed below ground. While fiber cables may be buried individually inside a protective innerduct, common practice for backbone routes is to build a multi-duct conduit system. Typically one or more large (4" diameter) ducts are placed, and then two to four smaller innerducts, each capable of holding one fiber cable, are pulled inside the large duct.

PEI has observed underground backbone routes being built with from one to eight large ducts, but the most common arrangement seems to be four ducts. Common practice is to place three innerducts in each large duct. For the purpose of this estimate, PEI has assumed four 4" ducts per backbone, each equipped with three innerducts.

Lateral routes typically consist of from one to four large ducts, again with three innerducts in each. The sizing of lateral conduit systems is related to the length of the lateral. A short lateral to a building located within a few hundred feet of the backbone route would typically be built using a single 4" duct; whereas a lateral which extends several thousand feet is likely to have four or more ducts, and is likely to access a number of different customer locations. For the purpose of this estimate, PEI has assumed two 4" ducts per lateral, each equipped with three innerducts.

PEI studied the fiber optic cable routes of the CLEC's in six U S WEST cities, and observed that approximately 60% of these routes are below ground, and that the remainder are aerial. This 60-40 mix was assumed for both backbone and lateral routes for the purpose of developing this estimate.

FIBER OPTIC CABLE SIZES: Fiber optic cable is manufactured in a wide variety of sizes. Because the cost of creating the path for the cable is greater than the cost of the cable itself, carriers tend to place the larger standard sizes on backbone routes. Sizes used for laterals depend on the number of customer locations the lateral is expected to access.

Cables containing 288 fibers are becoming the standard for new backbone routes. However, many existing CLEC backbone routes were built prior to 1997, when common practice was to place 144 fiber cables. For the purposes of this study, PEI assumed 144 fiber count cables in backbone routes and 24 fiber cables in laterals.

TRANSMISSION SYSTEMS - BACKBONE: In theory, all fiber-optic transmission systems can be operated on only two fibers, one for transmitting and one for receiving. In practice, however, a backup fiber pair is added for reliability. OC48 systems have been the standard backbone transmission system for the past four to five years.

TRANSMISSION SYSTEMS - LATERALS: Frequently an equipment node is placed at the point along the backbone where the lateral is connected. This node may contain an "add-drop" multiplexer which allows OC3 or lower rate circuits to be dropped from, or added to the higher rate backbone system, to connect to the customer location(s) along the lateral. The service to a particular customer location may range from a single DS1 to more than one OC3 or OC12 system. It is becoming common practice to utilize an OC3 system

to each major customer location, therefore PEI assumed the use of OC3's as the "average" transmission system in laterals for the purpose of capacity calculations.

SUMMARY OF ASSUMPTIONS:

Backbone routes, Full capacity, in-place technology:

Aerial: two 144 fiber cables

Below ground: Four 4" ducts, 3 innerducts each, one 144 fiber cable per innerduct

60% below ground, 40% aerial

OC48 transmission system operating on four fibers per system.

Lateral routes, Full capacity, in-place technology:

Aerial: One 24 fiber cable.

Below ground: Two 4" ducts, each with capacity for three innerducts, each capable of holding one fiber cable. Assume 24 fiber count cables.

60% below ground, 40% aerial.

OC3 transmission system operating on four fibers per system.

Percentage of full capacity cable and equipment deployed now: 20%.

CAPACITY CALCULATIONS - FULL CAPACITY BACKBONE ROUTE - AERIAL:

Number of fibers = 2 cables * 144 fibers per cable = 288 fibers

Number of transmission systems = number of fibers divided by 4 = 72

DS1 Equivalent Capacity = Number of OC48's * DS1's/OC48,
= 72*1,344 = 96,768

CAPACITY CALCULATIONS - FULL CAPACITY BACKBONE ROUTE - BELOW GROUND:

Number of cables = 4 ducts * 3 innerducts/duct = 12

Number of fibers = 12 cables * 144 fibers per cable = 1,728 fibers

Number of transmission systems = 1,728 fibers divided by 4 = 432

$$\begin{aligned}\text{DS1 Equivalent Capacity} &= \text{Number of OC48's} * \text{DS1's/OC48}, \\ &= 432 * 1,344 = 580,608\end{aligned}$$

**CAPACITY CALCULATIONS - FULL CAPACITY BACKBONE ROUTE -
COMPOSITE OF AERIAL AND BELOW GROUND ROUTES:**

$$\begin{aligned}\text{Composite, or average route capacity} &= 40\% \text{ times aerial capacity plus } 60\% \text{ times} \\ &\text{below ground capacity: } (.4 * 96,768) + (.6 * 580,608) =\end{aligned}$$

387,072 DS1 Equivalent Circuits per Backbone Route

**ESTIMATED PRESENT BACKBONE ROUTE CAPACITY, IN-PLACE
TECHNOLOGY:**

$$\begin{aligned}\text{Full capacity multiplied by estimated deployment factor,} \\ 387,072 * 20\% =\end{aligned}$$

**77,414 DS1 Equivalent Circuits per Backbone Route, using fiber and
equipment in place today.**

CAPACITY CALCULATIONS - FULL CAPACITY LATERAL ROUTE - AERIAL:

$$\text{Number of fibers} = 1 \text{ cable} * 24 \text{ fibers per cable} = 24 \text{ fibers}$$

$$\text{Number of transmission systems} = \text{number of fibers divided by } 4 = 6$$

$$\begin{aligned}\text{DS1 Equivalent Capacity} &= \text{Number of OC3's} * \text{DS1's/OC3}, \\ &= 6 * 84 = 504\end{aligned}$$

**CAPACITY CALCULATIONS - FULL CAPACITY LATERAL ROUTE - BELOW
GROUND:**

$$\text{Number of cables} = 2 \text{ ducts} * 3 \text{ innerducts/duct} = 6$$

$$\text{Number of fibers} = 6 \text{ cables} * 24 \text{ fibers per cable} = 144 \text{ fibers}$$

$$\text{Number of transmission systems} = 144 \text{ fibers divided by } 4 = 36$$

$$\begin{aligned}\text{DS1 Equivalent Capacity} &= \text{Number of OC3's} * \text{DS1's/OC3}, \\ &= 36 * 84 = 3,024\end{aligned}$$

CAPACITY CALCULATIONS - FULL CAPACITY LATERAL ROUTE - COMPOSITE OF AERIAL AND BELOW GROUND:

Composite, or average route capacity = 40% times aerial capacity plus 60% times below ground capacity: $(.4 * 504) + (.6 * 3,024) =$

2,016 DS1 Equivalent Circuits per Lateral Route

ESTIMATED PRESENT CAPACITY, LATERAL ROUTE, IN-PLACE TECHNOLOGY:

Estimated current deployment factor multiplied by Full Capacity estimate,
 $20\% * 2016 =$

**403 DS1 Equivalent Circuits per Lateral Route, using fiber and
equipment in place today.**

Again, note that the introduction of the next wave transmission equipment technology, (OC192 and WDM) expected in the 1999-2000 time frame, is expected to offer up to an 80 fold increase in capacity on existing optical fibers. Equipment manufacturers and others are conducting research to develop systems with even greater capacities.

COMPARISON OF ESTIMATED CLEC PRESENT SYTEM CAPACITIES TO PRESENT VOLUMES OF U S WEST HI-CAP SERVICES:

Using computerized maps developed from a geographic database, PEI plotted the backbone routes of the CLEC's as well as the present U S WEST hi-cap customer locations and service volumes. The purpose was to determine whether the estimated present CLEC route capacities were adequate to absorb the current volume of U S WEST hi-cap services.

LATERAL ROUTES: The most intense lateral routes observed were in the central business district, and involved up to 84 DS1 equivalents. This area is served with below-ground fiber routes, which typically have more capacity than aerial lateral routes, however this volume was well within the estimated present capacity of aerial lateral routes.

BACKBONE ROUTES: Three of the highest density backbone routes were examined. One was in the central business district, one was in the Renton vicinity south of Lake Washington, and one was in the Bellevue - Redmond area to the east of Lake Washington.

While the greatest number of services per square mile exist in the central business district and east of Lake Washington, as many as three CLECs have multiple, partly paralleling fiber ring routes in the area, so that the number of U S WEST services per CLEC backbone route mile is actually lower than the comparable density to the south of Lake Washington.

This established the fact that the single CLEC route (not extensively paralleled by other CLECs) which passed the largest number of U S WEST services, presently exists in the vicinity of Renton, a route to the south of the lake. The total U S WEST equivalent DS1 service volume passed by this route was less than 2,000. This is far less than the 77,000 DS1 equivalent capacity estimate of present CLEC backbone route capacity developed above.

PEI is led to conclude that there is more than enough capacity in the sum of the present CLEC fiber routes in the Seattle Metro area, to completely absorb the volume of hi-cap services presently served by U S WEST.

APPENDIX

- A. Sources of Data and Samplings Methods
- B. Path Costs
- C. Equipment Costs
- D. Total Costs
- E. Qualifications for POWER Engineers, Inc.

APPENDIX

A. Sources of Data and Samplings Methods

- I. Development of sampling process and sample sizes:
STATISTICAL METHODS, Snedecor and Cochran, Sixth Edition, The Iowa State University Press, pp. 516-517.
- II. Structure Costs, including Building Entry and extension to Equipment Room:
Location Specific Cost Estimates by Frank Chilcoat, Prime Communications, Inc., Phoenix, AZ
- III. Cable Sizes and Types
PEI Experience
Frank Chilcoat, Prime Communications, Inc., Phoenix, AZ
- IV. Cable Costs
PEI Experience
Graybar Electric Co., Inc.
Frank Chilcoat, Prime Communications, Inc., Phoenix, AZ
- V. Installation and Termination Loadings on Cable Costs
PEI Experience
Frank Chilcoat, Prime Communications, Inc., Phoenix, AZ
- VI. Equipment Configurations and Costs
Donald M. Malagisi, R & L Electronics, Lakewood, CO., equipment broker and network design consultant.
- VII. Build Time
PEI Experience
Frank Chilcoat, Prime Communications, Inc.
- VIII. Wireless Access Reference
PEI Experience
IEEE Proceedings, December, 1997, Volume 12, and pp. 1958-1972, M. Gagnaire: An Overview of Broad-Band Access Technology

APPENDIX

B. Path Costs

COST BY DISTANCE BAND
FROM CAP FIBER ROUTE

PATH COST CALCULATIONS
AVERAGE COST PER
LOCATION IN EACH BAND

DETERMINED FROM
LOCATION SPECIFIC
ESTIMATES

	DIST,	DIST,	DIST,			TOT					TOT
LOCATION	FIBER/	BLDG	TO EQPT	PATH	BLDG	PATH	STRUC.	FEET,		CABLE	OSP
ID	PROP	ENTR.	ROOM	TYPE	ENTR	COST	COST	TDIST	MH	COST	COST
0 TO 1,000 FT FROM CLEC FIBER ROUTE											
2340	450	20	39	A/B	1,500	12,300	10,800	509	B RSR	814	13,114
2341	450	60	120	A/B	2,200	10,900	8,700	630	B&P RSR	1008	11,908
2352	500	10	55	A	2,600	12,850	10,250	565	BR&DG	904	13,754
2411	500	50	225	A	4,500	16,300	11,800	775	B RSR	1240	17,540
2413	10	270	140	B	3,500	13,700	10,200	420	P RSR	672	14,372
2416	105	36	120	B	3,700	8,900	5,200	261		418	9,318
2433	330	80	95	A	2,700	14,700	12,000	505		808	15,508
2483	45	10	117	B	2,500	7,400	4,900	172	B&P RSR	275	7,675
2489	50	15	75	B	1,200	6,500	5,300	140	MH	224	6,724
2490	100	100	620	B	4,500	18,000	13,500	820	MH	1312	19,312
2503	550	100	141	B	4,500	15,700	11,200	791		1266	16,966
2509	320	0	168	B	4,500	23,000	18,500	488		781	23,781
2522	700	24	101	B	3,600	16,900	13,300	825		1320	18,220
2536	60	10	147	B	4,200	8,200	4,000	217		347	8,547
2541	60	10	131	B	3,900	9,800	5,900	201	HH	322	10,122
2547	240	0	273	B	3,200	11,200	8,000	513		821	12,021
2551	105	0	231	B	8,400	27,000	18,600	336		538	27,538
2556	30	10	119	B	4,700	9,800	5,100	159		254	10,054
2559	900	50	127	B	6,500	80,000	73,500	1077		1723	81,723
2569	10	15	470	B	8,700	12,800	4,100	495		792	13,592
2570	500	10	159	B	5,800	18,500	12,700	669		1070	19,570
2573	410	10	42	B	2,200	2,900	700	462		739	3,639
2576	0	57	140	B	3,700	8,500	4,800	197		315	8,815
2578	390	10	52	B	2,200	10,950	8,750	452		723	11,673
2605	1085	16	419	A	9,200	21,000	11,800	1520		2432	23,432
2607	588	33	120	A	3,900	7,800	3,900	741		1186	8,986
2610	208	15	223	A	3,750	9,650	5,900	446		714	10,364
2611	444	15	209	A	4,400	9,700	5,300	668		1069	10,769
2612	245	12	137	A	2,900	13,600	10,700	394		630	14,230
2634	230	30	87	AER	2,900	4,500	1,600	347		555	5,055
2635	1400	20	150	A/B	5,200	34,000	28,800	1570		2512	36,512
2661	0	400	261	A/U	7,100	7,100	0	661		1058	8,158
2665	1805	96	111	B	4,000	36,000	32,000	2012		3219	39,219
2668	1390	106	100	B	5,200	34,000	28,800	1596		2554	36,554
2677	260	12	159	A	3,900	8,500	4,600	431		690	9,190
2678	69	0	120	A/U	3,800	7,500	3,700	189		302	7,802
2685	68	20	120	B	3,100	7,100	4,000	208		333	7,433
2688	900	15	108	B	2,900	27,000	24,100	1023		1637	28,637
2695	10	0	278	B	3,750	14,000	10,250	288	MH	461	14,461
2704	10	65	114	U	4,600	6,600	2,000	189		302	6,902
2712	170	12	293	B	3,100	9,600	6,500	475		760	10,360
2722	603	210	75	B	3,500	18,000	14,500	888		1421	19,421
2725	213	231	167	B	4,700	14,000	9,300	611		978	14,978
2730	0	456	274	B	7,800	11,800	4,000	730		1168	12,968
2740	0	50	551	B	5,400	8,900	3,500	601		962	9,862
2755	498	0	180	B	2,900	12,800	9,900	678	VAULT	1085	13,885
2772	124	0	84	B	2,300	8,900	6,600	208		333	9,233
2774	650	90	136	B	3,800	9,200	5,400	876		1402	10,602
2801	1080	148	140	B	3,800	26,500	22,700	1368		2189	28,689

COST BY DISTANCE BAND
FROM CAP FIBER ROUTE

PATH COST CALCULATIONS
AVERAGE COST PER
LOCATION IN EACH BAND

DETERMINED FROM
LOCATION SPECIFIC
ESTIMATES

	DIST,	DIST,									
	DIST,	PROP/	BLDG ENT		TOT					TOT	
LOCATION	FIBER/	BLDG	TO EQPT	PATH	BLDG	PATH	STRUC.	FEET,		CABLE	OSP
ID	PROP	ENTR.	ROOM	TYPE	ENTR	COST	COST	TDIST	MH	COST	COST
2808	214	9	194	B	3,200	11,500	8,300	417		667	12,167
2813	502	21	215	B	4,200	18,500	14,300	738		1181	19,681
2816	304	69	104	A/B	2,300	9,600	7,300	477		763	10,363
2818	196	39	125	B	2,900	10,500	7,600	360		576	11,076
2831	0	650	112	B	8,900	8,900	0	762	EX MH	1219	10,119
SUMMARY: 0 TO 1,000 FT FROM CLEC FIBER ROUTE											
TOTALS	20081	3797	9273		224400	803550	579150	33151		53041.6	856591.6
AMPLES =	54										
AVERAGES	371.87	70.3148	171.722		4155.56	14880.556	10725	613.907		982.252	15862.807
1000+ TO 2,000 FT FROM CLEC FIBER ROUTE											
2332	1300	60	75	B	4,400	27,500	23,100	1435		2296	29,796
2336	2112	130	143	A	2,300	35,300	33,000	2385		3816	39,116
2372	1600	12	137	B	6,800	62,000	55,200	1749	PR, V	2798	64,798
2600	1584	15	114	A	4,500	16,250	11,750	1713	B,P RSR	2741	18,991
2637	1383	24	92	A	2,400	16,500	14,100	1499	B,P RSR	2398	18,898
3081	1534	14	162	B	5,200	46,000	40,800	1710		2736	48,736
3371	1584	39	175	B	4,800	42,500	37,700	1798		2877	45,377
3456	2350	6	150	B	5,200	39,000	33,800	2506		4010	43,010
3464	4350	120	145	B	4,500	61,500	57,000	4615		7384	68,884
3488	2376	30	50	A	2,900	17,500	14,600	2456		3930	21,430
3489	3700	84	90	B	3,700	52,500	48,800	3874		6198	58,698
3517	1700	120	200	A/B	6,500	28,800	22,300	2020		3232	32,032
3682	555	30	192	B	3,800	15,000	11,200	777		1243	16,243
3687	0	30	158	B	5,800	5,800	0	188		301	6,101
3895	518	88	25	A	1,800	7,800	6,000	631		1010	8,810
4047	1020	55	109	A/U	4,800	26,900	22,100	1184		1894	28,794
4177	2298	58	440	A	10,800	24,000	13,200	2796		4474	28,474
4185	2100	120	223	B	5,400	48,000	42,600	2443		3909	51,909
4186	2840	155	245	B	5,500	52,500	47,000	3240		5184	57,684
4195	2625	140	150	B	4,200	42,500	38,300	2915		4664	47,164
4357	450	80	227	B	6,200	15,800	9,600	757		1211	17,011
4366	2175	48	62	A	2,700	25,000	22,300	2285		3656	28,656
SUMMARY: 1000+ TO 2,000 FT FROM CLEC FIBER ROUTE											
TOTALS	40154	1458	3364		104200	708650	604450	44976		71961.6	780611.6
AMPLES =	22										
AVERAGES	1825.18	66.2727	152.909		4736.36	32211.364	27475	2044.36		3270.98	35482.345

COST BY DISTANCE BAND
FROM CAP FIBER ROUTE

PATH COST CALCULATIONS
AVERAGE COST PER
LOCATION IN EACH BAND

DETERMINED FROM
LOCATION SPECIFIC
ESTIMATES

	DIST,	DIST,								
	DIST,	PROPI	BLDG ENT		TOT					TOT
LOCATION	FIBER/	BLDG	TO EQPT	PATH	BLDG	PATH	STRUC.	FEET,		CABLE
ID	PROP	ENTR.	ROOM	TYPE	ENTR	COST	COST	TDIST	MH	OSP
2000+ TO 4,000 FT FROM CLEC FIBER ROUTE										
2406	3200	210	176	B	9,500	63,700	54,200	3586		5738
2428	4200	33	142	B	3,200	65,000	61,800	4375		7000
2520	4240	24	95	A	3,700	39,000	35,300	4359		6974
2651	6588	22	145	A/B	6,900	39,000	32,100	6755		10808
2657	6688	0	94	A/B	4,100	41,000	36,900	6782		10851
2803	7392	40	60	A/U	2,800	62,500	59,700	7492		11987
2964	3696	90	325	M/R/V	6,700	94,600	87,900	4111		6578
3403	3500	120	100	A	4,100	21,000	16,900	3720		5952
3649	5200	72	170	A/B	4,300	65,000	60,700	5442		8707
3812	10520	200	100	A	2,700	36,300	33,600	10820		17312
4075	3630	67	185	A/U	4,800	26,900	22,100	3882		6211
4238	7240	140	280	B	6,500	89,000	82,500	7660		12256
4245	8190	160	235	B	7,400	195,000	187,600	8585		13736
4327	3185	118	345	A	8,500	48,000	39,500	3648		5837
4334	5080	180	254	A/B	5,800	68,000	62,200	5514		8822
4355	3620	175	504	B	7,900	68,000	60,100	4299		6878
4410	4849	96	192	A	8,100	52,000	43,900	5137		8219
4476	5360	100	305	A/B	5800	59,500	53,700	5765		9224
4504	5354	82	146	B	6,800	74,500	67,700	5582		8931
4505	4994	147	75	B,RR	6,500	64,000	57,500	5216		8346
SUMMARY: 2000+ TO 4,000 FT FROM CLEC FIBER ROUTE										
TOTALS	106726	2076	3928		116,100	1,272,000	1155900	112730		180368
AMPLES =	20									
AVERAGES	5336.3	103.8	196.4		5805	63600	57795	5636.5		9018.4
4000+ TO 9,000 FT FROM CLEC FIBER ROUTE										
2351	11400	420	212	A/B	7,500	51,500	44,000	12032		19251
2370	8000	105	225	A/B	8,500	48,000	39,500	8330		13328
2383	6800	90	227	A/B	9,800	83,000	73,200	7117		11387
2475	7800	12	92	B	3,500	98,300	94,800	7904		12646
2499	8980	0	96	A	3500	63000	59,500	66596		106554
2531	10560	49	222	A	5,500	71,000	65,500	10831		17330
2648	7454	89	268	A/B	6,900	39,000	32,100	7811		12498
2793	8960	20	264	B	4900	53000	48,100	14124		22598
2806	7400	40	35	B	5,300	48,500	43,200	7475		11960
2914	5800	30	50	B	3,300	62,500	59,200	5880		9408
2943	5750	71	150	B	2,900	83,000	80,100	5971		9554
3563	15840	36	63	A/B	5,400	165,400	160,000	15939		25502
3688	10900	80	100	A	4,100	108,000	103,900	11080		17728
3705	10104	100	9	A	2,500	220,000	217,500	10213		16341
3769	6340	50	82	A	2,900	43,000	40,100	6472		10355
3904	10580	10	30	B	2,800	72,200	69,400	10620		16992

COST BY DISTANCE BAND
FROM CAP FIBER ROUTE

PATH COST CALCULATIONS
AVERAGE COST PER
LOCATION IN EACH BAND

DETERMINED FROM
LOCATION SPECIFIC
ESTIMATES

	DIST, FIBER/ PROP	DIST, PROP/ BLDG ENTR.	DIST, BLDG ENT TO EQPT ROOM	PATH TYPE	BLDG ENTR	TOT PATH COST	STRUC. COST	FEET, TDIST	MH	CABLE COST	OSP COST
3952	4525	65	223	A	7,100	28,000	20,900	4813		7701	35,701
4315	3900	300	380	A/B	5,300	56,000	50,700	4580		7328	63,328
4447	6970	400	220	A/B	6,200	59,000	52,800	7590		12144	71,144
4518	7400	86	265	B	8,100	148,250	140,150	7751		12402	160,652
4546	7785	96	140	B	6,800	128,000	121,200	8021		12834	140,834
4554	10030	275	72	A/B	6,100	196,000	189,900	10377		16603	212,603
4578	5810	290	375	B	8,900	196,000	187,100	6475		10360	206,360
4596	6840	186	443	B	11,800	84,000	72,200	7469		11950	95,950
4600	6120	94	99	A/B	4,800	75,500	70,700	6313		10101	85,601
4626	7400	110	223	A	11,500	68,000	56,500	7733		12373	80,373
SUMMARY: 4000+ TO 9,000 FT FROM CLEC FIBER ROUTE											
TOTALS	209448	3104	4565		155900	2348150	2192250	279517		447227	2795377.2
AMPLES =	26										
AVERAGES	8055.69	119.385	175.577		5996.15	90313.462	84317.3	10750.7		17201	107514.51
SEATTLE FIELD SAMPLE SUMMARY BY DISTANCE BAND - AVERAGE COSTS INCLUDING ADJUSTED STRUCTURE COST FOR COMMON PATH FACTOR (-40%)											
DISTANCE	BLDG ENTR COST	BLDG ENTR COST	ADJUSTED STRUCT. COST	ADJUSTED CABLE COST	ADJ. TOTAL OSP COST						
0 TO 1,000	4,156	10,725	6,435	982	11,573						
1,000+ FEE	4,736	27,475	16,485	3,271	24,492						
2,000+ FEE	5,805	57,795	34,677	9,018	49,500						
4,000+ FEE	5,996	84,317	50,590	17,201	73,788						

APPENDIX

C. Equipment Costs

12/16/98

HI-CAP SERVICE EQUIPMENT COSTS
INCLUDING INSTALLATION

ONE CUSTOMER END PLUS INCREMENTAL CO/HUB COSTS

DS1 SERVICE

FOR 1 TO 3 DS1'S, USE

QUAD SYSTEM WITHOUT AUTOMATIC ROUTE PROTECTION \$5,468
CAPACITY: 4 DS1'S PER SYSTEM
2 FIBERS PER QUAD SYSTEM

EXAMPLE, FOR N DS1'S	N=	1	
QUADS	1		\$5,468
EQPT COST PER DS1			\$5,468
FIBERS USED	2		

EXAMPLE, FOR N DS1'S	N=	3	
QUADS	1		\$5,468
EQPT COST PER DS1			\$1,823
FIBERS USED	2		

DS1 SERVICE

FOR 4 TO 12 DS1'S, USE

QUAD SYSTEM WITH AUTOMATIC ROUTE PROTECTION
CAPACITY: 4 DS1'S PER SYSTEM
4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

QUAD SYSTEM	\$5,468
HIGH SPEED INTERFACE CARD/SYSTEM	\$2,000
INTERFACE SWITCH CARD/SYSTEM	\$600

COST = (5468+2600)*ROUNDUP(N/4,0)

EXAMPLE, FOR N DS1'S	N=	5	
QUADS	2		\$16,136
EQPT COST PER DS1			\$3,227
FIBERS USED	8		

EXAMPLE, FOR N DS1'S	N=	12	
QUADS	3		\$24,204
EQPT COST PER DS1			\$2,017
FIBERS USED	12		

HI-CAP SERVICE EQUIPMENT COSTS
INCLUDING INSTALLATION

ONE CUSTOMER END PLUS INCREMENTAL CO/HUB COSTS

FOR 13 TO 56 DS1'S, USE

DS3 SYSTEM WITH AUTOMATIC ROUTE PROTECTION

CAPACITY: 28 DS1'S PER DS3 SYSTEM

4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

HUB TRANSCEIVERS/SYSTEM	\$3,972
CUST PRM COMMONS/SYSTEM	\$13,400
HIGH SPEED INTERFACE CARD/SYSTEM	\$2,200
HIGH SPEED INTERFACE SWITCH CARD/SYSTEM	\$800
DS-1 CARD/FOUR DS-1'S, MAX=7/SYS	\$705
TOTAL COST FOR N DS1'S =	
ROUNDUP(N/28,0)*(3972+13400+2200+800)+ROUNDUP(N/4)*705	

EXAMPLE, FOR N DS1'S	N=	13
HT'S (NO. OF SYSTEMS)	1	\$3,972
CUST PREM COM	1	\$13,400
H.S. INTERFACE CARDS	1	\$2,200
H.S. INTERFACE SW. CARDS	1	\$800
DS1 CARDS	4	\$2,820
TOTAL FOR 24 DS1'S		<u>\$23,192</u>
EQPT COST PER DS1		\$1,784
FIBERS USED =	4	

EXAMPLE, FOR N DS1'S	N=	56
HT'S (NO. OF SYSTEMS)	2	\$7,944
CUST PREM COM	2	\$26,800
H.S. INTERFACE CARDS	2	\$2,200
H.S. INTERFACE SW. CARDS	2	\$800
DS1 CARDS	14	<u>\$9,870</u>
TOTAL FOR 24 DS1'S		<u>\$50,614</u>
EQPT COST PER DS1		\$904
FIBERS USED	8	

HI-CAP SERVICE EQUIPMENT COSTS
INCLUDING INSTALLATION

ONE CUSTOMER END PLUS INCREMENTAL CO/HUB COSTS

DS-1 SERVICE

FOR 57 OR MORE DS1'S USE

OC-3 SYSTEM WITH AUTOMATIC ROUTE PROTECTION

CAPACITY - 84 DS1'S PER SYSTEM

4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

HUB TRANSCEIVERS	\$6,675
CUST PRM COMMONS	\$31,745
HIGH SPEED INTERFACE CARDS, 1 PER SYSTEM	\$2,400
H. S. INTERFACE SWITCH CARDS, 1 PER SYSTEM	\$1,000
DS-1 CARD PER FOUR DS-1'S, MAX OF 7,21*4=84	\$738
TOTAL COST FOR N DS1'S=	
ROUNDUP(N/84,0)*(6675+31745+2400+1000)+ROUNDUP(N/4,0)*738	

EXAMPLE, FOR N DS1'S	N=	57
HT'S (NO. OF SYSTEMS)	1	\$6,675
CUST PREM COM	1	\$31,745
H.S. INTERFACE CARDS	1	\$2,400
H.S. INTERFACE SW. CARDS	1	\$1,000
DS1 CARDS	15	\$11,070
TOTAL FOR 24 DS1'S		\$52,890
EQPT COST PER DS1		\$928
NUMBER OF FIBER	4	

EXAMPLE, FOR N DS1'S	N=	85
HT'S (NO. OF SYSTEMS)	2	\$13,350
CUST PREM COM	2	\$63,490
H.S. INTERFACE CARDS	2	\$4,800
H.S. INTERFACE SW. CARDS	2	\$2,000
DS1 CARDS	22	\$16,236
TOTAL FOR 24 DS1'S		\$99,876
EQPT COST PER DS1		\$1,175
NUMBER OF FIBER	8	

EXAMPLE, FOR N DS1'S	N=	168
HT'S (NO. OF SYSTEMS)	2	\$13,350
CUST PREM COM	2	\$63,490
H.S. INTERFACE CARDS	2	\$4,800
H.S. INTERFACE SW. CARDS	2	\$2,000
DS1 CARDS	42	\$30,996
TOTAL FOR 24 DS1'S		\$114,636
EQPT COST PER DS1		\$682
NUMBER OF FIBER	8	

HI-CAP SERVICE EQUIPMENT COSTS
INCLUDING INSTALLATION

ONE CUSTOMER END PLUS INCREMENTAL CO/HUB COSTS

DS-3 SERVICE

FOR 1 TO 3 DS3'S USE

OC-3 SYSTEM WITH AUTOMATIC ROUTE PROTECTION

CAPACITY: 3 DS3'S PER SYSTEM

4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

HUB TRANSCEIVERS/SYSTEM	\$6,675
CUSTOMER PREMISE COMMONS/SYSTEM	\$31,745
HIGH SPEED INTERFACE CARDS, 1 PER SYSTEM	\$2,400
H. S. INTERFACE SWITCH CARDS, 1 PER SYSTEM	\$1,000
DS3 CARD/DS3	\$2,700
TOTAL, N DS3'S =	
ROUNDUP(N/3,0)*(6675+31745+2400+1000)+(N*2700)	

EXAMPLE, FOR N DS-3'S	N=	1
HT'S (NO. OF SYSTEMS)	1	\$6,675
CUST PREM COM	1	\$31,745
H. S. INTERFACE CARDS	1	\$2,400
H. S. INTERFACE SW. CARDS	1	\$1,000
DS-3 CARDS	1	\$2,700
TOTAL FOR N DS-3'S		<u>\$44,520</u>
COST PER DS-3		\$44,520
FIBERS USED	4	

EXAMPLE, FOR N DS-3'S	N=	3
HT'S (NO. OF SYSTEMS)	1	\$6,675
CUST PREM COM	1	\$31,745
H. S. INTERFACE CARDS	1	\$2,400
H. S. INTERFACE SW. CARDS	1	\$1,000
DS-3 CARDS	3	\$8,100
TOTAL FOR N DS-3'S		<u>\$49,920</u>
COST PER DS-3		\$16,640
FIBERS USED	4	

HI-CAP SERVICE EQUIPMENT COSTS
INCLUDING INSTALLATION

ONE CUSTOMER END PLUS INCREMENTAL CO/HUB COSTS

FOR 4 TO 12 DS3'S, USE

OC-12 SYSTEM WITH AUTOMATIC ROUTE PROTECTION

CAPACITY: 12 DS3'S PER SYSTEM

4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

HUB TRANCEIVERS	1/SYSTEM	\$7,875
CUST PREM COMMONS	1/SYSTEM	\$40,737
HIGH SPEED INTERFACE CARDS, 1 PER SYSTEM		\$2,500
H. S. INTERFACE SWITCH CARDS, 1 PER SYSTEM		\$1,200
DS3 CARD-FOUR DS3 PER CARD		\$7,100
TOTAL, N DS3'S =		
'ROUNDUP(N/12,0)*(7875+40737+2500+1200)+ROUNDUP(N/4,0)*7100		

FOR 4 TO 12 DS3'S, CONTINUED

EXAMPLE, FOR N DS3'S	N=	4
HT'S (NO. OF SYSTEMS)=	1	\$7,875
CUST PREM COMMONS	1	\$40,737
H. S. INTERFACE CARDS	1	\$2,500
H. S. INTERFACE SW. CARDS	1	\$1,200
DS3 CARDS	1	\$7,100
TOTAL FOR N DS3'S =		\$55,712
COST PER DS3 =		\$13,928
NUMBER OF FIBER	4	

EXAMPLE, FOR N DS3'S	N=	12
HT'S (NO. OF SYSTEMS)=	1	\$7,875
CUST PREM COMMONS	1	\$40,737
H. S. INTERFACE CARDS	1	\$2,500
H. S. INTERFACE SW. CARDS	1	\$1,200
DS3 CARDS	3	\$21,300
TOTAL FOR N DS3'S =		\$69,912
COST PER DS3 =		\$5,826
NUMBER OF FIBER	4	

HI-CAP SERVICE EQUIPMENT COSTS
INCLUDING INSTALLATION

ONE CUSTOMER END PLUS INCREMENTAL CO/HUB COSTS

DS-3 SERVICE

FOR 13 OR MORE DS3'S, USE

OC-48 SYSTEM WITH AUTOMATIC ROUTE PROTECTION

CAPACITY: 48 DS3'S PER SYSTEM

4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

HUB TRANCEIVERS	1/SYSTEM	\$9,724
CUST PREM COMMONS	1/SYSTEM	\$48,747
HIGH SPEED INTERFACE CARDS, 1 PER SYSTEM		\$2,600
H. S. INTERFACE SWITCH CARDS, 1 PER SYSTEM		\$1,400
DS3 CARD, FOUR DS3' PER CARD		\$7,100
TOTAL, N DS3'S =		
'ROUNDUP(N/48,0)*(9724+48747+2600+1400)+ROUNDUP(N/4,0)*7100		

EXAMPLE, FOR N DS3'S	N=	13
HT'S (NO. OF SYSTEMS)=	1	\$9,724
CUST PREM COMMONS	1	\$48,747
H. S. INTERFACE CARDS	1	\$2,600
H. S. INTERFACE SW. CARDS	1	\$1,400
DS3 CARDS	4	\$28,400
TOTAL FOR N DS3'S =		\$90,871
COST PER DS3 =		\$6,990
NUMBER OF FIBER	4	

FOR 4 TO 13 OR MORE DS3'S, CONTINUED

EXAMPLE, FOR N DS3'S	N=	48
HT'S (NO. OF SYSTEMS)=	1	\$9,724
CUST PREM COMMONS	1	\$48,747
H. S. INTERFACE CARDS	1	\$2,600
H. S. INTERFACE SW. CARDS	1	\$1,400
DS3 CARDS	12	\$85,200
TOTAL FOR N DS3'S =		\$147,671
COST PER DS3 =		\$3,076
NUMBER OF FIBER	4	

HI-CAP SERVICE EQUIPMENT COSTS
INCLUDING INSTALLATION

ONE CUSTOMER END PLUS INCREMENTAL CO/HUB COSTS

OC-3 SERVICE

OC-3 SYSTEM WITH AUTOMATIC ROUTE PROTECTION

ONE OC-3 CIRCUIT PER SYSTEM

4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

HUB TRANSCEIVER	\$6,675
CUST PREM COMS	\$31,745
HIGH SPEED INTERFACE CARDS, 1 PER SYSTEM	\$2,400
H. S. INTERFACE SWITCH CARDS, 1 PER SYSTEM	\$1,000
TOTAL	\$41,820

EXAMPLE, FOR N OC-3 CIRCUITS	N=	4
HUB TRANSCEIVERS	4	\$26,700
CUST PREM COMS	4	\$126,980
H. S. INTERFACE CARDS	4	\$2,400
H. S. INTERFACE SW. CARDS	4	\$1,000
TOTAL		\$157,080
COST PER OC-3		\$39,270
NUMBER OF FIBER	16	

OC-12 SERVICE

OC-12 SYSTEM WITH AUTOMATIC ROUTE PROTECTION

ONE OC-12 CIRCUIT PER SYSTEM

4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

HUB TRANSCEIVER	\$7,875
CUST PREM COMS	\$40,737
HIGH SPEED INTERFACE CARDS, 1 PER SYSTEM	\$2,500
H. S. INTERFACE SWITCH CARDS, 1 PER SYSTEM	\$1,200
TOTAL	\$52,312

EXAMPLE, FOR N OC-12 CIRCUITS	N=	4
HUB TRANSCEIVERS	4	\$31,500
CUST PREM COMS	4	\$162,948
H. S. INTERFACE CARDS	4	\$10,000
H. S. INTERFACE SW. CARDS	4	\$4,800
TOTAL		\$194,448
COST PER OC-12		\$48,612
NUMBER OF FIBER	16	

HI-CAP SERVICE EQUIPMENT COSTS
INCLUDING INSTALLATION

ONE CUSTOMER END PLUS INCREMENTAL CO/HUB COSTS

OC-48 SERVICE

OC-48 SYSTEM WITH AUTOMATIC ROUTE PROTECTION

ONE OC-48 CIRCUIT PER SYSTEM

4 FIBERS PER SYSTEM = 2 PRIMARY + 2 PROTECTION FIBERS

HUB TRANCEIVER	\$9,274
CUST PREM COMMONS	\$48,747
HIGH SPEED INTERFACE CARDS, 1 PER SYSTEM	\$2,600
H. S. INTERFACE SWITCH CARDS, 1 PER SYSTEM	\$1,400
TOTAL	<u>\$62,021</u>

EXAMPLE, FOR N OC-48 CIRCUITS	N=	4
HUB TRANSCEIVERS	4	\$37,096
CUST PREM COMS	4	\$194,988
H. S. INTERFACE CARDS	4	\$10,400
H. S. INTERFACE SW. CARDS	4	\$5,600
TOTAL		<u>\$248,084</u>
COST PER OC-3		\$62,021
NUMBER OF FIBER	16	

APPENDIX

D. Total Costs

12/16/98

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
2535	1	0	0	0	0	11,573	5,468	17,041
2540	2	0	0	0	0	11,573	5,468	17,041
2556	1	0	0	0	0	11,573	5,468	17,041
2557	3	0	0	0	0	11,573	5,468	17,041
2558	1	0	0	0	0	11,573	5,468	17,041
2559	3	0	0	0	0	11,573	5,468	17,041
2560	1	0	0	0	0	11,573	5,468	17,041
2561	1	0	0	0	0	11,573	5,468	17,041
2562	2	0	0	0	0	11,573	5,468	17,041
2563	1	0	0	0	0	11,573	5,468	17,041
2566	1	0	0	0	0	11,573	5,468	17,041
2569	1	0	0	0	0	11,573	5,468	17,041
2570	5	0	0	0	0	11,573	16,136	27,709
2576	2	0	0	0	0	11,573	5,468	17,041
2579	1	0	0	0	0	11,573	5,468	17,041
2582	1	0	0	0	0	11,573	5,468	17,041
2583	1	0	0	0	0	11,573	5,468	17,041
2584	2	0	0	0	0	11,573	5,468	17,041
2585	2	0	0	0	0	11,573	5,468	17,041
2601	1	0	0	0	0	11,573	5,468	17,041
2606	1	0	0	0	0	11,573	5,468	17,041
2607	1	0	0	0	0	11,573	5,468	17,041
2608	1	0	0	0	0	11,573	5,468	17,041
2609	2	0	0	0	0	11,573	5,468	17,041
2620	4	0	0	0	0	11,573	8,068	19,641
2621	1	0	0	0	0	11,573	5,468	17,041
2622	1	0	0	0	0	11,573	5,468	17,041
2623	1	0	0	0	0	11,573	5,468	17,041
2624	3	0	0	0	0	11,573	5,468	17,041
2625	2	0	0	0	0	11,573	5,468	17,041
2627	1	0	0	0	0	11,573	5,468	17,041
2629	2	0	0	0	0	11,573	5,468	17,041
2630	1	0	0	0	0	11,573	5,468	17,041
2631	1	0	0	0	0	11,573	5,468	17,041
2632	6	0	0	0	0	11,573	16,136	27,709
2633	1	0	0	0	0	11,573	5,468	17,041
2634	1	0	0	0	0	11,573	5,468	17,041
2635	1	0	0	0	0	11,573	5,468	17,041
2636	1	0	0	0	0	11,573	5,468	17,041
2639	1	0	0	0	0	11,573	5,468	17,041
2640	1	0	0	0	0	11,573	5,468	17,041
2643	2	0	0	0	0	11,573	5,468	17,041
2644	2	0	0	0	0	11,573	5,468	17,041
2645	1	0	0	0	0	11,573	5,468	17,041
2646	1	0	0	0	0	11,573	5,468	17,041
2648	1	0	0	0	0	11,573	5,468	17,041
2649	2	0	0	0	0	11,573	5,468	17,041
2650	4	0	0	0	0	11,573	8,068	19,641

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
2651	1	0	0	0	0	11,573	5,468	17,041
2663	1	0	0	0	0	11,573	5,468	17,041
2665	3	0	0	0	0	11,573	5,468	17,041
2666	3	0	0	0	0	11,573	5,468	17,041
2667	1	0	0	0	0	11,573	5,468	17,041
2669	2	0	0	0	0	11,573	5,468	17,041
2670	1	0	0	0	0	11,573	5,468	17,041
2671	6	0	0	0	0	11,573	16,136	27,709
2672	1	0	0	0	0	11,573	5,468	17,041
2673	1	0	0	0	0	11,573	5,468	17,041
2674	4	0	0	0	0	11,573	8,068	19,641
2675	1	0	0	0	0	11,573	5,468	17,041
2676	17	0	0	0	0	11,573	23,897	35,470
2677	62	2	0	0	0	11,573	99,475	111,048
2678	6	0	0	0	0	11,573	16,136	27,709
2680	4	0	0	0	0	11,573	8,068	19,641
2682	1	0	0	0	0	11,573	5,468	17,041
2683	1	0	0	0	0	11,573	5,468	17,041
2687	3	0	0	0	0	11,573	5,468	17,041
2688	1	0	0	0	0	11,573	5,468	17,041
2694	5	0	0	0	0	11,573	16,136	27,709
2696	2	0	0	0	0	11,573	5,468	17,041
2697	1	0	0	0	0	11,573	5,468	17,041
2698	0	0	0	1	0	11,573	52,312	63,885
2699	1	0	0	0	0	11,573	5,468	17,041
2700	2684	250	2	5	2	11,573	3,124,806	3,136,379
2701	1	0	0	0	0	11,573	5,468	17,041
2703	2	0	0	0	0	11,573	5,468	17,041
2707	1	0	0	0	0	11,573	5,468	17,041
2718	1	0	0	0	0	11,573	5,468	17,041
2721	6	0	0	0	0	11,573	16,136	27,709
2722	11	0	0	0	0	11,573	24,204	35,777
2724	1	0	0	0	0	11,573	5,468	17,041
2725	1	0	0	0	0	11,573	5,468	17,041
2726	3	0	0	0	0	11,573	5,468	17,041
2727	1	0	0	0	0	11,573	5,468	17,041
2728	1	0	0	0	0	11,573	5,468	17,041
2729	2	0	0	0	0	11,573	5,468	17,041
2732	1	0	0	0	0	11,573	5,468	17,041
2733	3	0	0	0	0	11,573	5,468	17,041
2735	1	0	0	0	0	11,573	5,468	17,041
2736	1	0	0	0	0	11,573	5,468	17,041
2737	31	0	0	0	0	11,573	46,384	57,957
2738	1	0	0	0	0	11,573	5,468	17,041
2739	1	0	0	0	0	11,573	5,468	17,041
2740	5	0	0	0	0	11,573	16,136	27,709
2741	1	0	0	0	0	11,573	5,468	17,041
2742	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
2743	3	0	0	0	0	11,573	5,468	17,041
2744	240	37	0	0	1	11,573	365,232	376,805
2745	2	0	0	0	0	11,573	5,468	17,041
2748	2	0	0	0	0	11,573	5,468	17,041
2749	1	0	0	0	0	11,573	5,468	17,041
2750	2	0	0	0	0	11,573	5,468	17,041
2751	7	0	0	0	0	11,573	16,136	27,709
2752	1	2	0	0	0	11,573	47,958	59,531
2753	0	3	0	0	0	11,573	49,920	61,493
2754	1	0	0	0	0	11,573	5,468	17,041
2758	5	0	0	0	0	11,573	16,136	27,709
2759	1	0	0	0	0	11,573	5,468	17,041
2760	2	0	0	0	0	11,573	5,468	17,041
2761	1	0	0	0	0	11,573	5,468	17,041
2762	2	0	0	0	0	11,573	5,468	17,041
2763	1	0	0	0	0	11,573	5,468	17,041
2765	3	0	0	0	0	11,573	5,468	17,041
2766	1	0	0	0	0	11,573	5,468	17,041
2768	2	0	0	0	0	11,573	5,468	17,041
2769	1	0	0	0	0	11,573	5,468	17,041
2770	2	0	0	0	0	11,573	5,468	17,041
2771	1	0	0	0	0	11,573	5,468	17,041
2772	1	0	0	0	0	11,573	5,468	17,041
2781	1	0	0	0	0	11,573	5,468	17,041
2784	2	0	0	0	0	11,573	5,468	17,041
2786	4	0	0	0	0	11,573	8,068	19,641
2789	1	0	0	0	0	11,573	5,468	17,041
2790	2	0	0	0	0	11,573	5,468	17,041
2795	0	0	0	0	0	11,573	0	11,573
2796	4	1	0	0	0	11,573	45,258	56,831
2797	1	0	0	0	0	11,573	5,468	17,041
2798	1	0	0	0	0	11,573	5,468	17,041
2799	1	0	0	0	0	11,573	5,468	17,041
2801	1	0	0	0	0	11,573	5,468	17,041
2803	1	0	0	0	0	11,573	5,468	17,041
2804	2	0	0	0	0	11,573	5,468	17,041
2809	2	0	0	0	0	11,573	5,468	17,041
2810	1	0	0	0	0	11,573	5,468	17,041
2811	5	0	0	0	0	11,573	16,136	27,709
2813	1	0	0	0	0	11,573	5,468	17,041
2816	2	0	0	0	0	11,573	5,468	17,041
2817	6	2	0	0	0	11,573	48,696	60,269
2818	1	0	0	0	0	11,573	5,468	17,041
2819	2	0	0	0	0	11,573	5,468	17,041
2820	19	0	0	0	0	11,573	23,897	35,470
2824	1	0	0	0	0	11,573	5,468	17,041
2825	3	0	0	0	0	11,573	5,468	17,041
2826	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
2827	2	0	0	0	0	11,573	5,468	17,041
2828	1	0	0	0	0	11,573	5,468	17,041
2829	1	0	0	0	0	11,573	5,468	17,041
2830	1	0	0	0	0	11,573	5,468	17,041
2831	2	0	0	0	0	11,573	5,468	17,041
2832	1	0	0	0	0	11,573	5,468	17,041
2833	1	0	0	0	0	11,573	5,468	17,041
2835	112	0	0	4	0	11,573	313,552	325,125
2836	9	1	0	0	0	11,573	46,734	58,307
2837	3	0	0	0	0	11,573	5,468	17,041
2838	3	0	0	0	0	11,573	5,468	17,041
2839	2	0	0	0	0	11,573	5,468	17,041
2840	1	0	0	0	0	11,573	5,468	17,041
2841	1	0	0	0	0	11,573	5,468	17,041
2842	1	0	0	0	0	11,573	5,468	17,041
2843	3	0	0	0	0	11,573	5,468	17,041
2844	1	0	0	0	0	11,573	5,468	17,041
2845	3	0	0	0	0	11,573	5,468	17,041
2846	1	0	0	0	0	11,573	5,468	17,041
2847	1	0	0	0	0	11,573	5,468	17,041
2848	1	0	0	0	0	11,573	5,468	17,041
2849	1	0	0	0	0	11,573	5,468	17,041
2851	2	0	0	0	0	11,573	5,468	17,041
2852	2	0	0	0	0	11,573	5,468	17,041
2853	2	0	0	0	0	11,573	5,468	17,041
2854	1	0	0	0	0	11,573	5,468	17,041
2855	1	0	0	0	0	11,573	5,468	17,041
2856	1	0	0	0	0	11,573	5,468	17,041
2860	1	0	0	0	0	11,573	5,468	17,041
2861	3	3	0	0	0	11,573	55,388	66,961
2862	1	0	0	0	0	11,573	5,468	17,041
2866	3	0	0	0	0	11,573	5,468	17,041
2867	3	0	0	0	0	11,573	5,468	17,041
2869	89	8	0	0	0	11,573	66,512	78,085
2870	8	0	0	0	0	11,573	16,136	27,709
2871	2	0	0	0	0	11,573	5,468	17,041
2872	1	0	0	0	0	11,573	5,468	17,041
2874	9	0	0	0	0	11,573	24,204	35,777
2882	3	0	0	0	0	11,573	5,468	17,041
2885	45	4	0	0	0	11,573	68,268	79,841
2886	1	0	0	0	0	11,573	5,468	17,041
2887	1	0	0	0	0	11,573	5,468	17,041
2889	1	0	0	0	0	11,573	5,468	17,041
2891	1	0	0	0	0	11,573	5,468	17,041
2893	1	0	0	0	0	11,573	5,468	17,041
2895	3	0	0	0	0	11,573	5,468	17,041
2896	1	0	0	0	0	11,573	5,468	17,041
2901	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
2902	9	0	0	0	0	11,573	24,204	35,777
2903	7	0	0	0	0	11,573	16,136	27,709
2904	1	0	0	0	0	11,573	5,468	17,041
2906	2	0	0	0	0	11,573	5,468	17,041
2907	36	6	4	0	0	11,573	280,881	292,454
2908	1	0	0	0	0	11,573	5,468	17,041
2911	1	0	0	0	0	11,573	5,468	17,041
2912	3	0	0	0	0	11,573	5,468	17,041
2913	1	0	0	0	0	11,573	5,468	17,041
2914	2	0	0	0	0	11,573	5,468	17,041
2915	5	0	0	0	0	11,573	16,136	27,709
2916	3	0	0	0	0	11,573	5,468	17,041
2917	20	0	0	0	0	11,573	23,897	35,470
2919	1	0	0	0	0	11,573	5,468	17,041
2920	2	0	0	0	0	11,573	5,468	17,041
2921	2	0	0	0	0	11,573	5,468	17,041
2922	1	0	0	0	0	11,573	5,468	17,041
2923	1	0	0	0	0	11,573	5,468	17,041
2924	2	0	0	0	0	11,573	5,468	17,041
2925	3	0	0	0	0	11,573	5,468	17,041
2926	1	0	0	0	0	11,573	5,468	17,041
2927	1	0	0	0	0	11,573	5,468	17,041
2928	0	1	0	0	0	11,573	44,520	56,093
2929	3	0	0	0	0	11,573	5,468	17,041
2930	1	0	0	0	0	11,573	5,468	17,041
2931	7	0	0	0	0	11,573	16,136	27,709
2932	2	0	0	0	0	11,573	5,468	17,041
2933	1	0	0	0	0	11,573	5,468	17,041
2934	1	0	0	0	0	11,573	5,468	17,041
2937	1	0	0	0	0	11,573	5,468	17,041
2938	1	0	0	0	0	11,573	5,468	17,041
2939	8	0	0	0	0	11,573	16,136	27,709
2940	1	0	0	0	0	11,573	5,468	17,041
2941	1	0	0	0	0	11,573	5,468	17,041
2942	1	0	0	0	0	11,573	5,468	17,041
2943	1	0	0	0	0	11,573	5,468	17,041
2945	2	0	0	0	0	11,573	5,468	17,041
2950	1	0	0	0	0	11,573	5,468	17,041
2953	1	0	0	0	0	11,573	5,468	17,041
2955	1	0	0	0	0	11,573	5,468	17,041
2956	4	0	0	0	0	11,573	8,068	19,641
2958	1	0	0	0	0	11,573	5,468	17,041
2960	2	0	0	0	0	11,573	5,468	17,041
2961	5	0	0	0	0	11,573	16,136	27,709
2962	5	0	0	0	0	11,573	16,136	27,709
2963	2	0	0	0	0	11,573	5,468	17,041
2964	2	0	0	0	0	11,573	5,468	17,041
2970	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
2971	2	0	0	0	0	11,573	5,468	17,041
2972	1	0	0	0	0	11,573	5,468	17,041
2973	1	0	0	0	0	11,573	5,468	17,041
2974	1	0	0	0	0	11,573	5,468	17,041
2976	4	0	0	0	0	11,573	8,068	19,641
2979	1	0	0	0	0	11,573	5,468	17,041
2982	1	0	0	0	0	11,573	5,468	17,041
2984	6	0	0	0	0	11,573	16,136	27,709
2985	4	0	0	0	0	11,573	8,068	19,641
2988	1	0	0	0	0	11,573	5,468	17,041
2989	1	0	0	0	0	11,573	5,468	17,041
2990	2	0	0	0	0	11,573	5,468	17,041
2991	1	0	0	0	0	11,573	5,468	17,041
2992	1	0	0	0	0	11,573	5,468	17,041
2993	2	0	0	0	0	11,573	5,468	17,041
2994	1	0	0	0	0	11,573	5,468	17,041
2996	1	0	0	0	0	11,573	5,468	17,041
2997	1	0	0	0	0	11,573	5,468	17,041
2998	1	0	0	0	0	11,573	5,468	17,041
2999	1	0	0	0	0	11,573	5,468	17,041
3000	1	0	0	0	0	11,573	5,468	17,041
3002	2	0	0	0	0	11,573	5,468	17,041
3003	8	0	0	0	0	11,573	16,136	27,709
3004	2	0	0	0	0	11,573	5,468	17,041
3006	2	0	0	0	0	11,573	5,468	17,041
3007	3	0	0	0	0	11,573	5,468	17,041
3008	1	0	0	0	0	11,573	5,468	17,041
3012	2	0	0	0	0	11,573	5,468	17,041
3013	2	0	0	0	0	11,573	5,468	17,041
3014	4	0	0	0	0	11,573	8,068	19,641
3015	4	0	0	0	0	11,573	8,068	19,641
3017	2	0	0	0	0	11,573	5,468	17,041
3018	1	0	0	0	0	11,573	5,468	17,041
3019	1	0	0	0	0	11,573	5,468	17,041
3020	1	0	0	0	0	11,573	5,468	17,041
3021	2	0	0	0	0	11,573	5,468	17,041
3023	4	0	0	0	0	11,573	8,068	19,641
3024	4	0	0	0	0	11,573	8,068	19,641
3025	4	0	0	0	0	11,573	8,068	19,641
3029	4	0	0	0	0	11,573	8,068	19,641
3030	1	0	0	0	0	11,573	5,468	17,041
3031	86	9	0	0	0	11,573	173,488	185,061
3032	45	2	0	0	0	11,573	76,283	87,856
3034	2	0	0	0	0	11,573	5,468	17,041
3035	2	0	0	0	0	11,573	5,468	17,041
3037	1	0	0	0	0	11,573	5,468	17,041
3038	1	0	0	0	0	11,573	5,468	17,041
3040	4	0	0	0	0	11,573	8,068	19,641

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3041	3	0	0	0	0	11,573	5,468	17,041
3042	1	0	0	0	0	11,573	5,468	17,041
3043	1	0	0	0	0	11,573	5,468	17,041
3044	1	0	0	0	0	11,573	5,468	17,041
3047	4	0	0	0	0	11,573	8,068	19,641
3048	1	0	0	0	0	11,573	5,468	17,041
3049	1	0	0	0	0	11,573	5,468	17,041
3050	1	0	0	0	0	11,573	5,468	17,041
3051	3	0	0	0	0	11,573	5,468	17,041
3052	2	0	0	0	0	11,573	5,468	17,041
3054	1	0	0	0	0	11,573	5,468	17,041
3055	1	0	0	0	0	11,573	5,468	17,041
3056	1	0	0	0	0	11,573	5,468	17,041
3057	6	0	0	0	0	11,573	16,136	27,709
3058	2	0	0	0	0	11,573	5,468	17,041
3059	11	0	0	0	0	11,573	24,204	35,777
3060	4	0	0	0	0	11,573	8,068	19,641
3061	2	0	0	0	0	11,573	5,468	17,041
3062	5	0	0	0	0	11,573	16,136	27,709
3063	1	0	0	0	0	11,573	5,468	17,041
3064	1	0	0	0	0	11,573	5,468	17,041
3065	2	0	0	0	0	11,573	5,468	17,041
3068	2	0	0	0	0	11,573	5,468	17,041
3069	1	0	0	0	0	11,573	5,468	17,041
3070	2	0	0	0	0	11,573	5,468	17,041
3072	1	0	0	0	0	11,573	5,468	17,041
3074	1	0	0	0	0	11,573	5,468	17,041
3075	8	0	0	0	0	11,573	16,136	27,709
3077	1	0	0	0	0	11,573	5,468	17,041
3079	2	0	0	0	0	11,573	5,468	17,041
3080	1	0	0	0	0	11,573	5,468	17,041
3082	1	0	0	0	0	11,573	5,468	17,041
3083	1	0	0	0	0	11,573	5,468	17,041
3084	1	0	0	0	0	11,573	5,468	17,041
3085	1	0	0	0	0	11,573	5,468	17,041
3087	1	0	0	0	0	11,573	5,468	17,041
3088	1	0	0	0	0	11,573	5,468	17,041
3089	2	0	0	0	0	11,573	5,468	17,041
3090	2	0	0	0	0	11,573	5,468	17,041
3091	1	0	0	0	0	11,573	5,468	17,041
3093	1	0	0	0	0	11,573	5,468	17,041
3094	2	0	0	0	0	11,573	5,468	17,041
3095	1	0	0	0	0	11,573	5,468	17,041
3096	1	0	0	0	0	11,573	5,468	17,041
3097	1	0	0	0	0	11,573	5,468	17,041
3098	4	0	0	0	0	11,573	8,068	19,641
3099	2	0	0	0	0	11,573	5,468	17,041
3100	5	0	0	0	0	11,573	16,136	27,709

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3101	1	0	0	0	0	11,573	5,468	17,041
3102	2	0	0	0	0	11,573	5,468	17,041
3103	1	0	0	0	0	11,573	5,468	17,041
3104	4	0	0	0	0	11,573	8,068	19,641
3105	4	0	0	0	0	11,573	8,068	19,641
3106	4	0	0	0	0	11,573	8,068	19,641
3107	2	0	0	0	0	11,573	5,468	17,041
3108	1	0	0	0	0	11,573	5,468	17,041
3109	1	0	0	0	0	11,573	5,468	17,041
3110	6	0	0	0	0	11,573	16,136	27,709
3111	1	0	0	0	0	11,573	5,468	17,041
3112	1	0	0	0	0	11,573	5,468	17,041
3113	3	0	0	0	0	11,573	5,468	17,041
3114	6	0	0	0	0	11,573	16,136	27,709
3115	2	0	0	0	0	11,573	5,468	17,041
3116	2	0	0	0	0	11,573	5,468	17,041
3117	9	0	0	0	0	11,573	24,204	35,777
3118	2	0	0	0	0	11,573	5,468	17,041
3119	2	0	0	0	0	11,573	5,468	17,041
3120	1	0	0	0	0	11,573	5,468	17,041
3121	1	0	0	0	0	11,573	5,468	17,041
3122	4	0	0	0	0	11,573	8,068	19,641
3123	2	0	0	0	0	11,573	5,468	17,041
3124	1	0	0	0	0	11,573	5,468	17,041
3125	1	0	0	0	0	11,573	5,468	17,041
3128	1	0	0	0	0	11,573	5,468	17,041
3129	1	0	0	0	0	11,573	5,468	17,041
3131	1	0	0	0	0	11,573	5,468	17,041
3132	1	0	0	0	0	11,573	5,468	17,041
3133	1	0	0	0	0	11,573	5,468	17,041
3135	2	0	0	0	0	11,573	5,468	17,041
3137	1	0	0	0	0	11,573	5,468	17,041
3138	1	0	0	0	0	11,573	5,468	17,041
3142	6	0	0	0	0	11,573	16,136	27,709
3144	8	0	0	0	0	11,573	16,136	27,709
3145	2	0	0	0	0	11,573	5,468	17,041
3147	1	0	0	0	0	11,573	5,468	17,041
3148	2	0	0	0	0	11,573	5,468	17,041
3149	2	0	0	0	0	11,573	5,468	17,041
3150	12	0	0	0	0	11,573	24,204	35,777
3151	3	0	0	0	0	11,573	5,468	17,041
3152	10	0	0	0	0	11,573	24,204	35,777
3153	1	0	0	0	0	11,573	5,468	17,041
3155	1	0	0	0	0	11,573	5,468	17,041
3156	1	0	0	0	0	11,573	5,468	17,041
3157	1	0	0	0	0	11,573	5,468	17,041
3158	199	30	1	2	0	11,573	428,075	439,648
3159	25	2	2	0	0	11,573	136,026	147,599

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3160	2	0	0	0	0	11,573	5,468	17,041
3163	1	0	0	0	0	11,573	5,468	17,041
3164	4	0	0	0	0	11,573	8,068	19,641
3165	1	0	0	0	0	11,573	5,468	17,041
3166	1	0	0	0	0	11,573	5,468	17,041
3167	1	0	0	0	0	11,573	5,468	17,041
3168	2	0	0	0	0	11,573	5,468	17,041
3169	1	0	0	0	0	11,573	5,468	17,041
3170	1	0	0	0	0	11,573	5,468	17,041
3171	1	0	0	0	0	11,573	5,468	17,041
3172	1	0	0	0	0	11,573	5,468	17,041
3173	1	0	0	0	0	11,573	5,468	17,041
3174	3	0	0	0	0	11,573	5,468	17,041
3176	2	0	0	0	0	11,573	5,468	17,041
3177	1	0	0	0	0	11,573	5,468	17,041
3178	1	0	0	0	0	11,573	5,468	17,041
3179	1	0	0	0	0	11,573	5,468	17,041
3180	1	0	0	0	0	11,573	5,468	17,041
3181	1	0	0	0	0	11,573	5,468	17,041
3183	1	0	0	0	0	11,573	5,468	17,041
3184	1	0	0	0	0	11,573	5,468	17,041
3185	1	0	0	0	0	11,573	5,468	17,041
3186	3	0	0	0	0	11,573	5,468	17,041
3187	1	0	0	0	0	11,573	5,468	17,041
3188	5	0	0	0	0	11,573	16,136	27,709
3189	1	0	0	0	0	11,573	5,468	17,041
3190	3	0	0	0	0	11,573	5,468	17,041
3191	1	0	0	0	0	11,573	5,468	17,041
3192	1	0	0	0	0	11,573	5,468	17,041
3193	2	0	0	0	0	11,573	5,468	17,041
3194	1	0	0	0	0	11,573	5,468	17,041
3195	1	0	0	0	0	11,573	5,468	17,041
3196	3	0	0	0	0	11,573	5,468	17,041
3197	1	0	0	0	0	11,573	5,468	17,041
3198	6	0	0	0	0	11,573	16,136	27,709
3199	1	0	0	0	0	11,573	5,468	17,041
3200	1	0	0	0	0	11,573	5,468	17,041
3201	8	0	0	0	0	11,573	16,136	27,709
3202	1	0	0	0	0	11,573	5,468	17,041
3203	3	0	0	0	0	11,573	5,468	17,041
3204	22	0	0	0	0	11,573	24,602	36,175
3205	2	0	0	0	0	11,573	5,468	17,041
3206	1	0	0	0	0	11,573	5,468	17,041
3209	3	0	0	0	0	11,573	5,468	17,041
3210	5	0	0	0	0	11,573	16,136	27,709
3211	2	0	0	0	0	11,573	5,468	17,041
3212	1	0	0	0	0	11,573	5,468	17,041
3213	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3220	1	0	0	0	0	11,573	5,468	17,041
3221	1	0	0	0	0	11,573	5,468	17,041
3222	1	0	0	0	0	11,573	5,468	17,041
3225	2	0	0	0	0	11,573	5,468	17,041
3226	1	0	0	0	0	11,573	5,468	17,041
3227	3	0	0	0	0	11,573	5,468	17,041
3228	42	2	0	0	0	11,573	75,578	87,151
3229	2	0	0	0	0	11,573	5,468	17,041
3230	2	0	0	0	0	11,573	5,468	17,041
3231	4	0	0	0	0	11,573	8,068	19,641
3232	27	0	0	0	0	11,573	25,307	36,880
3234	1	0	0	0	0	11,573	5,468	17,041
3235	1	0	0	0	0	11,573	5,468	17,041
3236	1	0	0	0	0	11,573	5,468	17,041
3237	2	0	0	0	0	11,573	5,468	17,041
3240	1	0	0	0	0	11,573	5,468	17,041
3241	3	0	0	0	0	11,573	5,468	17,041
3242	1	0	0	0	0	11,573	5,468	17,041
3245	1	0	0	0	0	11,573	5,468	17,041
3247	2	0	0	0	0	11,573	5,468	17,041
3249	2	0	0	0	0	11,573	5,468	17,041
3250	1	0	0	0	0	11,573	5,468	17,041
3251	1	0	0	0	0	11,573	5,468	17,041
3252	1	0	0	0	0	11,573	5,468	17,041
3253	1	0	0	0	0	11,573	5,468	17,041
3254	10	0	0	0	0	11,573	24,204	35,777
3255	1	0	0	0	0	11,573	5,468	17,041
3256	1	0	0	0	0	11,573	5,468	17,041
3257	1	0	0	0	0	11,573	5,468	17,041
3258	5	0	0	0	0	11,573	16,136	27,709
3259	2	0	0	0	0	11,573	5,468	17,041
3260	3	0	0	0	0	11,573	5,468	17,041
3261	2	0	0	0	0	11,573	5,468	17,041
3262	1	0	0	0	0	11,573	5,468	17,041
3263	5	2	0	0	0	11,573	48,696	60,269
3264	2	0	0	0	0	11,573	5,468	17,041
3265	5	0	0	0	0	11,573	16,136	27,709
3266	5	0	0	0	0	11,573	16,136	27,709
3267	2	0	0	0	0	11,573	5,468	17,041
3268	2	0	0	0	0	11,573	5,468	17,041
3269	1	0	0	0	0	11,573	5,468	17,041
3270	1	0	0	0	0	11,573	5,468	17,041
3271	1	0	0	0	0	11,573	5,468	17,041
3272	1	0	0	0	0	11,573	5,468	17,041
3273	1	0	0	0	0	11,573	5,468	17,041
3274	13	0	0	0	0	11,573	23,192	34,765
3275	7	2	2	0	0	11,573	132,336	143,909
3277	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3281	1	0	0	0	0	11,573	5,468	17,041
3282	4	0	0	0	0	11,573	8,068	19,641
3283	1	0	0	0	0	11,573	5,468	17,041
3284	1	0	0	0	0	11,573	5,468	17,041
3285	1	0	0	0	0	11,573	5,468	17,041
3286	2	0	0	0	0	11,573	5,468	17,041
3287	2	0	0	0	0	11,573	5,468	17,041
3288	1	0	0	0	0	11,573	5,468	17,041
3289	1	0	0	0	0	11,573	5,468	17,041
3290	7	0	0	0	0	11,573	16,136	27,709
3291	1	0	0	0	0	11,573	5,468	17,041
3292	1	0	0	0	0	11,573	5,468	17,041
3293	3	0	0	0	0	11,573	5,468	17,041
3294	1	0	0	0	0	11,573	5,468	17,041
3295	3	0	0	0	0	11,573	5,468	17,041
3296	1	0	0	0	0	11,573	5,468	17,041
3297	10	0	0	0	0	11,573	24,204	35,777
3298	4	0	0	0	0	11,573	8,068	19,641
3300	29	0	0	0	0	11,573	46,384	57,957
3301	1	0	0	0	0	11,573	5,468	17,041
3302	1	0	0	0	0	11,573	5,468	17,041
3303	2	0	0	0	0	11,573	5,468	17,041
3304	2	0	0	0	0	11,573	5,468	17,041
3305	1	0	0	0	0	11,573	5,468	17,041
3306	3	0	0	0	0	11,573	5,468	17,041
3307	3	0	0	0	0	11,573	5,468	17,041
3308	5	2	0	0	0	11,573	48,696	60,269
3310	4	0	0	0	0	11,573	8,068	19,641
3311	5	0	0	0	0	11,573	16,136	27,709
3312	2	0	0	0	0	11,573	5,468	17,041
3313	2	0	0	0	0	11,573	5,468	17,041
3314	5	0	0	0	0	11,573	16,136	27,709
3315	4	0	0	0	0	11,573	8,068	19,641
3316	5	0	0	0	0	11,573	16,136	27,709
3317	4	0	0	0	0	11,573	8,068	19,641
3318	1	0	0	0	0	11,573	5,468	17,041
3319	2	0	0	0	0	11,573	5,468	17,041
3320	5	0	0	0	0	11,573	16,136	27,709
3321	1	0	0	0	0	11,573	5,468	17,041
3322	7	0	0	0	0	11,573	16,136	27,709
3323	265	30	0	0	0	11,573	335,997	347,570
3324	4	34	0	0	7	11,573	561,256	572,829
3325	2	0	0	0	0	11,573	5,468	17,041
3326	2	0	0	0	0	11,573	5,468	17,041
3328	1	0	0	0	0	11,573	5,468	17,041
3329	1	0	0	0	0	11,573	5,468	17,041
3330	1	0	0	0	0	11,573	5,468	17,041
3331	6	0	0	0	0	11,573	16,136	27,709

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3332	2	0	0	0	0	11,573	5,468	17,041
3333	3	0	0	0	0	11,573	5,468	17,041
3334	1	0	0	0	0	11,573	5,468	17,041
3335	2	0	0	0	0	11,573	5,468	17,041
3336	1	0	0	0	0	11,573	5,468	17,041
3337	1	0	0	0	0	11,573	5,468	17,041
3338	1	0	0	0	0	11,573	5,468	17,041
3339	6	0	0	0	0	11,573	16,136	27,709
3340	1	0	0	0	0	11,573	5,468	17,041
3341	1	0	0	0	0	11,573	5,468	17,041
3342	10	0	0	0	0	11,573	24,204	35,777
3343	7	0	0	0	0	11,573	16,136	27,709
3344	1	0	0	0	0	11,573	5,468	17,041
3345	1	0	0	0	0	11,573	5,468	17,041
3346	1	0	0	0	0	11,573	5,468	17,041
3347	4	0	0	0	0	11,573	8,068	19,641
3348	3	0	0	0	0	11,573	5,468	17,041
3349	2	0	0	0	0	11,573	5,468	17,041
3350	2	0	0	0	0	11,573	5,468	17,041
3351	2	0	0	0	0	11,573	5,468	17,041
3352	1	0	0	0	0	11,573	5,468	17,041
3353	5	0	0	0	0	11,573	16,136	27,709
3354	1	0	0	0	0	11,573	5,468	17,041
3355	3	0	0	0	0	11,573	5,468	17,041
3356	2	0	0	0	0	11,573	5,468	17,041
3357	1	0	0	0	0	11,573	5,468	17,041
3358	1	0	0	0	0	11,573	5,468	17,041
3359	1	0	0	0	0	11,573	5,468	17,041
3360	2	0	0	0	0	11,573	5,468	17,041
3361	8	0	0	0	0	11,573	16,136	27,709
3362	7	0	0	0	0	11,573	16,136	27,709
3364	1	0	0	0	0	11,573	5,468	17,041
3366	1	0	0	0	0	11,573	5,468	17,041
3367	4	0	0	0	0	11,573	8,068	19,641
3368	18	0	0	0	0	11,573	23,897	35,470
3369	7	0	0	0	0	11,573	16,136	27,709
3370	4	0	0	0	0	11,573	8,068	19,641
3371	3	0	0	0	0	11,573	5,468	17,041
3373	2	0	0	0	0	11,573	5,468	17,041
3374	1	0	0	0	0	11,573	5,468	17,041
3376	1	0	0	0	0	11,573	5,468	17,041
3377	5	0	0	0	0	11,573	16,136	27,709
3379	3	0	0	0	0	11,573	5,468	17,041
3380	2	0	0	0	0	11,573	5,468	17,041
3381	2	0	0	0	0	11,573	5,468	17,041
3382	1	0	0	0	0	11,573	5,468	17,041
3383	1	0	0	0	0	11,573	5,468	17,041
3384	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3385	1	0	0	0	0	11,573	5,468	17,041
3386	2	0	0	0	0	11,573	5,468	17,041
3387	3	0	0	0	0	11,573	5,468	17,041
3388	9	0	0	0	0	11,573	24,204	35,777
3389	1	0	0	0	0	11,573	5,468	17,041
3390	4	0	0	0	0	11,573	8,068	19,641
3391	15	0	0	0	0	11,573	23,192	34,765
3392	2	0	0	0	0	11,573	5,468	17,041
3393	12	0	0	0	0	11,573	24,204	35,777
3394	12	0	0	0	0	11,573	24,204	35,777
3395	2	0	0	0	0	11,573	5,468	17,041
3396	1	0	0	0	0	11,573	5,468	17,041
3397	2	0	0	0	0	11,573	5,468	17,041
3398	11	0	0	0	0	11,573	24,204	35,777
3399	40	0	0	0	0	11,573	47,794	59,367
3400	44	9	0	2	0	11,573	226,735	238,308
3401	3	0	0	0	0	11,573	5,468	17,041
3402	2	0	0	0	0	11,573	5,468	17,041
3403	1	0	0	0	0	11,573	5,468	17,041
3404	5	0	0	0	0	11,573	16,136	27,709
3405	10	0	0	0	0	11,573	24,204	35,777
3406	1	0	0	0	0	11,573	5,468	17,041
3407	2	0	0	0	0	11,573	5,468	17,041
3408	2	0	0	0	0	11,573	5,468	17,041
3409	10	0	0	0	0	11,573	24,204	35,777
3410	11	2	0	0	0	11,573	49,434	61,007
3411	3	0	0	0	0	11,573	5,468	17,041
3412	38	0	0	0	0	11,573	47,794	59,367
3413	16	0	0	0	0	11,573	23,192	34,765
3415	2	0	0	0	0	11,573	5,468	17,041
3416	0	2	0	0	0	11,573	47,220	58,793
3417	1	0	0	0	0	11,573	5,468	17,041
3418	1	0	0	0	0	11,573	5,468	17,041
3419	1	0	0	0	0	11,573	5,468	17,041
3421	1	0	0	0	0	11,573	5,468	17,041
3422	2	0	0	0	0	11,573	5,468	17,041
3423	1	0	0	0	0	11,573	5,468	17,041
3424	1	0	0	0	0	11,573	5,468	17,041
3425	7	0	0	0	0	11,573	16,136	27,709
3427	11	3	0	0	0	11,573	74,124	85,697
3428	1	0	0	0	0	11,573	5,468	17,041
3429	1	0	0	0	0	11,573	5,468	17,041
3430	1	0	0	0	0	11,573	5,468	17,041
3431	3	0	0	0	0	11,573	5,468	17,041
3432	1	0	0	0	0	11,573	5,468	17,041
3433	2	0	0	0	0	11,573	5,468	17,041
3434	3	0	0	0	0	11,573	5,468	17,041
3435	2	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3436	4	0	0	0	0	11,573	8,068	19,641
3437	1	0	0	0	0	11,573	5,468	17,041
3438	5	0	0	0	0	11,573	16,136	27,709
3439	329	30	2	0	0	11,573	431,445	443,018
3440	84	0	0	0	0	11,573	57,318	68,891
3441	1	1	0	0	0	11,573	45,258	56,831
3442	1	0	0	0	0	11,573	5,468	17,041
3443	1	0	0	0	0	11,573	5,468	17,041
3444	1	0	0	0	0	11,573	5,468	17,041
3445	16	25	0	0	3	11,573	301,186	312,759
3446	8	1	0	0	0	11,573	45,996	57,569
3447	2	0	0	0	0	11,573	5,468	17,041
3448	1	0	0	0	0	11,573	5,468	17,041
3449	2	0	0	0	0	11,573	5,468	17,041
3450	5	0	0	0	0	11,573	16,136	27,709
3451	2	0	0	0	0	11,573	5,468	17,041
3452	2	0	0	0	0	11,573	5,468	17,041
3453	8	0	0	0	0	11,573	16,136	27,709
3454	5	0	0	0	0	11,573	16,136	27,709
3455	1	0	0	0	0	11,573	5,468	17,041
3456	19	0	0	0	0	11,573	23,897	35,470
3457	8	0	0	0	0	11,573	16,136	27,709
3458	2	0	0	0	0	11,573	5,468	17,041
3459	4	0	0	0	0	11,573	8,068	19,641
3460	16	0	0	0	0	11,573	23,192	34,765
3461	12	0	0	0	0	11,573	24,204	35,777
3462	3	0	0	0	0	11,573	5,468	17,041
3463	1	0	0	0	0	11,573	5,468	17,041
3464	1	0	0	0	0	11,573	5,468	17,041
3465	1	0	0	0	0	11,573	5,468	17,041
3466	1	0	0	0	0	11,573	5,468	17,041
3467	1	0	0	0	0	11,573	5,468	17,041
3468	17	0	0	0	0	11,573	23,897	35,470
3469	3	0	0	0	0	11,573	5,468	17,041
3470	2	0	0	0	0	11,573	5,468	17,041
3471	5	0	0	0	0	11,573	16,136	27,709
3472	2	0	0	0	0	11,573	5,468	17,041
3473	1	0	0	0	0	11,573	5,468	17,041
3474	10	0	0	0	0	11,573	24,204	35,777
3475	2	0	0	0	0	11,573	5,468	17,041
3476	11	0	0	0	0	11,573	24,204	35,777
3477	7	0	0	0	0	11,573	16,136	27,709
3478	1	0	0	0	0	11,573	5,468	17,041
3479	2	0	0	0	0	11,573	5,468	17,041
3480	3	0	0	0	0	11,573	5,468	17,041
3481	3	0	0	0	0	11,573	5,468	17,041
3482	2	0	0	0	0	11,573	5,468	17,041
3483	3	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3484	1	0	0	0	0	11,573	5,468	17,041
3486	1	0	0	0	0	11,573	5,468	17,041
3487	1	0	0	0	0	11,573	5,468	17,041
3488	1	0	0	0	0	11,573	5,468	17,041
3489	1	0	0	0	0	11,573	5,468	17,041
3490	5	0	0	0	0	11,573	16,136	27,709
3491	44	0	0	0	0	11,573	48,499	60,072
3492	2	0	0	0	0	11,573	5,468	17,041
3493	1	0	0	0	0	11,573	5,468	17,041
3494	1	0	0	0	0	11,573	5,468	17,041
3495	6	0	0	0	0	11,573	16,136	27,709
3496	2	0	0	0	0	11,573	5,468	17,041
3497	2	0	0	0	0	11,573	5,468	17,041
3498	1	0	0	0	0	11,573	5,468	17,041
3499	2	0	0	0	0	11,573	5,468	17,041
3500	1	0	0	0	0	11,573	5,468	17,041
3501	1	0	0	0	0	11,573	5,468	17,041
3502	1	0	0	0	0	11,573	5,468	17,041
3503	3	0	0	0	0	11,573	5,468	17,041
3504	1	0	0	0	0	11,573	5,468	17,041
3505	2	0	0	0	0	11,573	5,468	17,041
3506	11	0	0	0	0	11,573	24,204	35,777
3507	15	0	0	0	0	11,573	23,192	34,765
3508	245	26	1	0	1	11,573	216,012	227,585
3509	30	11	0	7	0	11,573	466,039	477,612
3510	2	0	0	0	0	11,573	5,468	17,041
3511	1	0	0	0	0	11,573	5,468	17,041
3512	4	0	0	0	0	11,573	8,068	19,641
3513	8	0	0	0	0	11,573	16,136	27,709
3514	1	0	0	0	0	11,573	5,468	17,041
3515	7	0	0	0	0	11,573	16,136	27,709
3516	12	0	0	0	0	11,573	24,204	35,777
3517	2	0	0	0	0	11,573	5,468	17,041
3518	3	0	0	0	0	11,573	5,468	17,041
3519	2	0	0	0	0	11,573	5,468	17,041
3520	8	0	0	0	0	11,573	16,136	27,709
3521	1	0	0	0	0	11,573	5,468	17,041
3522	2	0	0	0	0	11,573	5,468	17,041
3523	31	0	0	0	0	11,573	46,384	57,957
3524	1	0	0	0	0	11,573	5,468	17,041
3525	2	0	0	0	0	11,573	5,468	17,041
3526	10	0	0	0	0	11,573	24,204	35,777
3527	1	0	0	0	0	11,573	5,468	17,041
3528	10	0	0	0	0	11,573	24,204	35,777
3529	3	0	0	0	0	11,573	5,468	17,041
3530	1	0	0	0	0	11,573	5,468	17,041
3531	1	0	0	0	0	11,573	5,468	17,041
3532	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3533	2	0	0	0	0	11,573	5,468	17,041
3534	2	0	0	0	0	11,573	5,468	17,041
3535	1	0	0	0	0	11,573	5,468	17,041
3536	10	2	0	0	0	11,573	49,434	61,007
3537	1	0	0	0	0	11,573	5,468	17,041
3538	1	0	0	0	0	11,573	5,468	17,041
3539	3	0	0	0	0	11,573	5,468	17,041
3540	1	0	0	0	0	11,573	5,468	17,041
3541	3	0	0	0	0	11,573	5,468	17,041
3542	1	0	0	0	0	11,573	5,468	17,041
3543	1	0	0	0	0	11,573	5,468	17,041
3544	1	0	0	0	0	11,573	5,468	17,041
3545	1	0	0	0	0	11,573	5,468	17,041
3546	4	0	0	0	0	11,573	8,068	19,641
3547	1	0	0	0	0	11,573	5,468	17,041
3548	1	0	0	0	0	11,573	5,468	17,041
3549	11	0	0	0	0	11,573	24,204	35,777
3550	1	0	0	0	0	11,573	5,468	17,041
3551	3	0	0	0	0	11,573	5,468	17,041
3552	4	0	0	0	0	11,573	8,068	19,641
3553	1	0	0	0	0	11,573	5,468	17,041
3554	3	0	0	0	0	11,573	5,468	17,041
3555	1	0	0	0	0	11,573	5,468	17,041
3556	1	0	0	0	0	11,573	5,468	17,041
3557	1	0	0	0	0	11,573	5,468	17,041
3558	1	0	0	0	0	11,573	5,468	17,041
3559	1	0	0	0	0	11,573	5,468	17,041
3560	2	0	0	0	0	11,573	5,468	17,041
3561	1	0	0	0	0	11,573	5,468	17,041
3562	16	0	0	0	0	11,573	23,192	34,765
3563	8	0	0	0	0	11,573	16,136	27,709
3564	1	0	0	0	0	11,573	5,468	17,041
3565	1	0	0	0	0	11,573	5,468	17,041
3566	2	0	0	0	0	11,573	5,468	17,041
3567	2	0	0	0	0	11,573	5,468	17,041
3568	5	0	0	0	0	11,573	16,136	27,709
3569	59	0	0	0	0	11,573	52,890	64,463
3570	3	0	0	0	0	11,573	5,468	17,041
3571	5	0	0	0	0	11,573	16,136	27,709
3572	2	0	0	0	0	11,573	5,468	17,041
3573	3	0	0	0	0	11,573	5,468	17,041
3574	3	0	0	0	0	11,573	5,468	17,041
3575	1	0	0	0	0	11,573	5,468	17,041
3576	10	2	0	0	0	11,573	49,434	61,007
3577	14	0	0	0	0	11,573	23,192	34,765
3578	1	0	0	0	0	11,573	5,468	17,041
3579	1	0	0	0	0	11,573	5,468	17,041
3580	2	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3581	1	0	0	0	0	11,573	5,468	17,041
3582	1	0	0	0	0	11,573	5,468	17,041
3583	1	0	0	0	0	11,573	5,468	17,041
3584	1	0	0	0	0	11,573	5,468	17,041
3585	2	0	0	0	0	11,573	5,468	17,041
3586	30	2	0	0	0	11,573	73,463	85,036
3587	378	6	2	0	2	11,573	553,404	564,977
3588	1	0	0	0	0	11,573	5,468	17,041
3589	1	0	0	0	0	11,573	5,468	17,041
3590	2	0	0	0	0	11,573	5,468	17,041
3591	1	0	0	0	0	11,573	5,468	17,041
3592	3	0	0	0	0	11,573	5,468	17,041
3593	9	0	0	0	0	11,573	24,204	35,777
3594	104	11	0	0	0	11,573	73,612	85,185
3595	11	0	0	0	0	11,573	24,204	35,777
3596	2	0	0	0	0	11,573	5,468	17,041
3597	2	0	0	0	0	11,573	5,468	17,041
3598	1	0	0	0	0	11,573	5,468	17,041
3599	2	0	0	0	0	11,573	5,468	17,041
3600	2	0	0	0	0	11,573	5,468	17,041
3601	4	0	0	0	0	11,573	8,068	19,641
3602	11	2	0	0	0	11,573	49,434	61,007
3603	22	0	0	0	0	11,573	24,602	36,175
3604	2	0	0	0	0	11,573	5,468	17,041
3605	12	0	0	0	0	11,573	24,204	35,777
3606	11	0	0	0	0	11,573	24,204	35,777
3607	1	0	0	0	0	11,573	5,468	17,041
3608	41	6	0	0	0	11,573	115,011	126,584
3609	1	0	0	0	0	11,573	5,468	17,041
3610	3	0	0	0	0	11,573	5,468	17,041
3611	4	0	0	0	0	11,573	8,068	19,641
3612	1	0	0	0	0	11,573	5,468	17,041
3613	1	0	0	0	0	11,573	5,468	17,041
3615	1	0	0	0	0	11,573	5,468	17,041
3616	24	0	0	0	0	11,573	24,602	36,175
3617	2	0	0	0	0	11,573	5,468	17,041
3618	4	0	0	0	0	11,573	8,068	19,641
3619	1	0	0	0	0	11,573	5,468	17,041
3620	1	0	0	0	0	11,573	5,468	17,041
3621	1	0	0	0	0	11,573	5,468	17,041
3622	5	0	0	0	0	11,573	16,136	27,709
3623	1	0	0	0	0	11,573	5,468	17,041
3624	1	0	0	0	0	11,573	5,468	17,041
3625	2	0	0	0	0	11,573	5,468	17,041
3626	18	2	0	0	0	11,573	50,910	62,483
3627	1	0	0	0	0	11,573	5,468	17,041
3628	1	0	0	0	0	11,573	5,468	17,041
3629	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3630	6	0	0	0	0	11,573	16,136	27,709
3631	6	0	0	0	0	11,573	16,136	27,709
3632	5	0	0	0	0	11,573	16,136	27,709
3633	60	0	0	0	0	11,573	52,890	64,463
3634	1	0	0	0	0	11,573	5,468	17,041
3635	77	7	0	0	0	11,573	101,446	113,019
3636	2	0	0	0	0	11,573	5,468	17,041
3637	1	0	0	0	0	11,573	5,468	17,041
3638	12	0	0	0	0	11,573	24,204	35,777
3639	1	0	0	0	0	11,573	5,468	17,041
3640	1	0	0	0	0	11,573	5,468	17,041
3641	2	0	0	0	0	11,573	5,468	17,041
3642	75	0	2	0	0	11,573	139,482	151,055
3643	1	0	0	0	0	11,573	5,468	17,041
3644	2	0	0	0	0	11,573	5,468	17,041
3645	2	0	0	0	0	11,573	5,468	17,041
3650	1	0	0	0	0	11,573	5,468	17,041
3651	2	0	0	0	0	11,573	5,468	17,041
3652	1	0	0	0	0	11,573	5,468	17,041
3653	1	0	0	0	0	11,573	5,468	17,041
3654	1	0	0	0	0	11,573	5,468	17,041
3655	1	0	0	0	0	11,573	5,468	17,041
3656	3	0	0	0	0	11,573	5,468	17,041
3657	417	41	0	0	0	11,573	140,571	152,144
3658	77	4	0	0	0	11,573	94,346	105,919
3659	7	0	0	0	0	11,573	16,136	27,709
3660	112	0	0	0	0	11,573	104,304	115,877
3661	3	0	0	0	0	11,573	5,468	17,041
3662	1	0	0	0	0	11,573	5,468	17,041
3663	1	0	0	0	0	11,573	5,468	17,041
3664	5	0	0	0	0	11,573	16,136	27,709
3665	2	0	0	0	0	11,573	5,468	17,041
3666	1	0	0	0	0	11,573	5,468	17,041
3667	2	0	0	0	0	11,573	5,468	17,041
3668	2	2	0	0	0	11,573	47,958	59,531
3669	1	0	0	0	0	11,573	5,468	17,041
3670	2	0	0	0	0	11,573	5,468	17,041
3671	3657	242	3	0	0	11,573	933,386	944,959
3672	742	130	5	0	0	11,573	1,144,461	1,156,034
3673	3	0	2	0	0	11,573	89,108	100,681
3674	8	0	0	0	0	11,573	16,136	27,709
3675	1	0	0	0	0	11,573	5,468	17,041
3676	31	0	2	0	0	11,573	130,024	141,597
3677	11	0	0	0	0	11,573	24,204	35,777
3678	15	0	0	0	0	11,573	23,192	34,765
3679	3	0	0	0	0	11,573	5,468	17,041
3680	132	0	5	0	0	11,573	317,094	328,667
3681	6	0	0	0	0	11,573	16,136	27,709

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
3682	5	0	0	0	0	11,573	16,136	27,709
3683	8	0	0	0	0	11,573	16,136	27,709
3684	1	0	0	0	0	11,573	5,468	17,041
3685	2	0	0	0	0	11,573	5,468	17,041
3686	42	2	0	0	0	11,573	75,578	87,151
3687	1	0	0	0	0	11,573	5,468	17,041
3688	24	0	0	0	0	11,573	24,602	36,175
3689	1	0	0	0	0	11,573	5,468	17,041
3690	3	0	0	0	0	11,573	5,468	17,041
3691	1	0	0	0	0	11,573	5,468	17,041
3692	0	14	0	0	0	11,573	90,871	102,444
3693	16	1	0	0	0	11,573	47,472	59,045
3694	6	3	0	0	0	11,573	66,056	77,629
3695	6	0	0	0	0	11,573	16,136	27,709
3696	1	0	0	0	0	11,573	5,468	17,041
3697	1	0	0	0	0	11,573	5,468	17,041
3698	1	0	0	0	0	11,573	5,468	17,041
3699	1	0	0	0	0	11,573	5,468	17,041
3700	3	0	0	0	0	11,573	5,468	17,041
3701	24	2	0	0	0	11,573	51,648	63,221
3702	23	4	0	0	0	11,573	63,840	75,413
3703	1	0	0	0	0	11,573	5,468	17,041
3704	1	0	0	0	0	11,573	5,468	17,041
3705	8	0	0	0	0	11,573	16,136	27,709
3706	6	0	0	0	0	11,573	16,136	27,709
3707	5	0	0	0	0	11,573	16,136	27,709
3708	4	0	0	0	0	11,573	8,068	19,641
3709	1	0	0	0	0	11,573	5,468	17,041
3710	2	0	0	0	0	11,573	5,468	17,041
3711	32	4	0	0	0	11,573	65,316	76,889
3712	4	0	0	0	0	11,573	8,068	19,641
3713	2	0	0	0	0	11,573	5,468	17,041
3714	2	0	0	0	0	11,573	5,468	17,041
3715	2	0	0	0	0	11,573	5,468	17,041
3718	14	0	0	0	0	11,573	23,192	34,765
3719	7	0	0	0	0	11,573	16,136	27,709
3720	11	0	0	0	0	11,573	24,204	35,777
3721	4	0	0	0	0	11,573	8,068	19,641
3722	3	0	0	0	0	11,573	5,468	17,041
3723	7	0	0	0	0	11,573	16,136	27,709
3724	7	0	0	0	0	11,573	16,136	27,709
3725	1	0	0	0	0	11,573	5,468	17,041
3726	2	0	0	0	0	11,573	5,468	17,041
3727	2	0	0	0	0	11,573	5,468	17,041
3728	2	0	0	0	0	11,573	5,468	17,041
3729	1	0	0	0	0	11,573	5,468	17,041
3730	2	0	0	0	0	11,573	5,468	17,041
3731	17	0	0	0	0	11,573	23,897	35,470

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3732	11	0	0	0	0	11,573	24,204	35,777
3733	1	0	0	0	0	11,573	5,468	17,041
3734	6	0	0	0	0	11,573	16,136	27,709
3735	2	0	0	0	0	11,573	5,468	17,041
3736	2	0	0	0	0	11,573	5,468	17,041
3737	6	0	0	0	0	11,573	16,136	27,709
3738	1	0	0	0	0	11,573	5,468	17,041
3739	2	0	0	0	0	11,573	5,468	17,041
3740	1	0	0	0	0	11,573	5,468	17,041
3741	1	0	0	0	0	11,573	5,468	17,041
3742	1	0	0	0	0	11,573	5,468	17,041
3743	2	0	0	0	0	11,573	5,468	17,041
3744	1	0	0	0	0	11,573	5,468	17,041
3745	1	0	0	0	0	11,573	5,468	17,041
3746	2	0	0	0	0	11,573	5,468	17,041
3747	1	0	0	0	0	11,573	5,468	17,041
3748	2	0	0	0	0	11,573	5,468	17,041
3749	1	0	0	0	0	11,573	5,468	17,041
3753	1	0	0	0	0	11,573	5,468	17,041
3754	1	0	0	0	0	11,573	5,468	17,041
3755	1	0	0	0	0	11,573	5,468	17,041
3756	6	0	0	0	0	11,573	16,136	27,709
3758	1	0	0	0	0	11,573	5,468	17,041
3759	1	0	0	0	0	11,573	5,468	17,041
3761	1	0	0	0	0	11,573	5,468	17,041
3762	1	0	0	0	0	11,573	5,468	17,041
3763	1	0	0	0	0	11,573	5,468	17,041
3764	1	0	0	0	0	11,573	5,468	17,041
3765	3	0	0	0	0	11,573	5,468	17,041
3766	1	0	0	0	0	11,573	5,468	17,041
3767	1	0	0	0	0	11,573	5,468	17,041
3768	1	0	0	0	0	11,573	5,468	17,041
3769	1	0	0	0	0	11,573	5,468	17,041
3770	5	0	0	0	0	11,573	16,136	27,709
3771	8	0	0	0	0	11,573	16,136	27,709
3772	3	0	0	0	0	11,573	5,468	17,041
3773	9	0	0	0	0	11,573	24,204	35,777
3774	5	0	0	0	0	11,573	16,136	27,709
3775	1	0	0	0	0	11,573	5,468	17,041
3777	1	0	0	0	0	11,573	5,468	17,041
3778	1	0	0	0	0	11,573	5,468	17,041
3779	8	0	0	0	0	11,573	16,136	27,709
3780	1	0	0	0	0	11,573	5,468	17,041
3781	1	0	0	0	0	11,573	5,468	17,041
3782	2	0	0	0	0	11,573	5,468	17,041
3783	4	0	0	0	0	11,573	8,068	19,641
3784	1	0	0	0	0	11,573	5,468	17,041
3785	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3786	2	0	0	0	0	11,573	5,468	17,041
3787	3	0	0	0	0	11,573	5,468	17,041
3788	2	0	0	0	0	11,573	5,468	17,041
3789	3	0	0	0	0	11,573	5,468	17,041
3790	2	0	0	0	0	11,573	5,468	17,041
3791	0	2	0	0	0	11,573	47,220	58,793
3793	6	0	0	0	0	11,573	16,136	27,709
3794	8	0	0	0	0	11,573	16,136	27,709
3795	1	0	0	0	0	11,573	5,468	17,041
3799	1	0	0	0	0	11,573	5,468	17,041
3800	14	0	0	0	0	11,573	23,192	34,765
3801	4	0	0	0	0	11,573	8,068	19,641
3802	1	0	0	0	0	11,573	5,468	17,041
3803	1	0	0	0	0	11,573	5,468	17,041
3804	4	0	0	0	0	11,573	8,068	19,641
3805	0	4	0	0	0	11,573	59,412	70,985
3806	1	0	0	0	0	11,573	5,468	17,041
3807	8	0	0	0	0	11,573	16,136	27,709
3808	1	0	0	0	0	11,573	5,468	17,041
3809	1	0	0	0	0	11,573	5,468	17,041
3815	1	0	0	0	0	11,573	5,468	17,041
3816	2	0	0	0	0	11,573	5,468	17,041
3821	4	0	0	0	0	11,573	8,068	19,641
3822	1	0	0	0	0	11,573	5,468	17,041
3823	2	0	0	0	0	11,573	5,468	17,041
3830	87	16	0	0	0	11,573	147,587	159,160
3831	123	15	0	0	0	11,573	197,389	208,962
3832	2	2	0	0	0	11,573	47,958	59,531
3834	3	0	0	0	0	11,573	5,468	17,041
3836	3	0	0	0	0	11,573	5,468	17,041
3839	1	0	0	0	0	11,573	5,468	17,041
3840	2	0	0	0	0	11,573	5,468	17,041
3841	2	0	0	0	0	11,573	5,468	17,041
3847	1	0	0	0	0	11,573	5,468	17,041
3848	1	0	0	0	0	11,573	5,468	17,041
3849	3	0	0	0	0	11,573	5,468	17,041
3850	2	0	0	0	0	11,573	5,468	17,041
3851	2	0	0	0	0	11,573	5,468	17,041
3852	10	0	0	0	0	11,573	24,204	35,777
3853	12	0	0	0	0	11,573	24,204	35,777
3854	1	0	0	0	0	11,573	5,468	17,041
3855	2	0	0	0	0	11,573	5,468	17,041
3858	1	0	0	0	0	11,573	5,468	17,041
3859	3	0	0	0	0	11,573	5,468	17,041
3860	2	0	0	0	0	11,573	5,468	17,041
3861	4	0	0	0	0	11,573	8,068	19,641
3863	1	0	0	0	0	11,573	5,468	17,041
3869	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3880	1	0	0	0	0	11,573	5,468	17,041
3881	1	0	0	0	0	11,573	5,468	17,041
3882	1	0	0	0	0	11,573	5,468	17,041
3888	3	0	0	0	0	11,573	5,468	17,041
3889	1	0	0	0	0	11,573	5,468	17,041
3892	1	0	0	0	0	11,573	5,468	17,041
3893	1	0	0	0	0	11,573	5,468	17,041
3900	1	0	0	0	0	11,573	5,468	17,041
3905	5	0	0	0	0	11,573	16,136	27,709
3907	2	0	0	0	0	11,573	5,468	17,041
3909	1	0	0	0	0	11,573	5,468	17,041
3912	7	0	0	0	0	11,573	16,136	27,709
3913	2	0	0	0	0	11,573	5,468	17,041
3914	1	0	0	0	0	11,573	5,468	17,041
3915	1	0	0	0	0	11,573	5,468	17,041
3916	3	0	0	0	0	11,573	5,468	17,041
3917	3	0	0	0	0	11,573	5,468	17,041
3918	1	0	0	0	0	11,573	5,468	17,041
3919	1	0	0	0	0	11,573	5,468	17,041
3920	1	0	0	0	0	11,573	5,468	17,041
3921	24	6	0	0	0	11,573	91,114	102,687
3922	4	0	0	0	0	11,573	8,068	19,641
3927	16	0	0	0	0	11,573	23,192	34,765
3928	6	0	0	0	0	11,573	16,136	27,709
3930	2	0	0	0	0	11,573	5,468	17,041
3932	1	0	0	0	0	11,573	5,468	17,041
3933	1	0	0	0	0	11,573	5,468	17,041
3934	1	0	0	0	0	11,573	5,468	17,041
3935	1	0	0	0	0	11,573	5,468	17,041
3941	2	0	0	0	0	11,573	5,468	17,041
3942	10	0	0	0	0	11,573	24,204	35,777
3943	2	0	0	0	0	11,573	5,468	17,041
3944	7	0	0	0	0	11,573	16,136	27,709
3945	14	0	0	0	0	11,573	23,192	34,765
3946	129	0	0	0	0	11,573	107,994	119,567
3947	7	0	0	0	0	11,573	16,136	27,709
3948	1	0	0	0	0	11,573	5,468	17,041
3949	4	0	0	0	0	11,573	8,068	19,641
3950	1	0	0	0	0	11,573	5,468	17,041
3952	1	0	0	0	0	11,573	5,468	17,041
3953	119	12	0	0	0	11,573	179,392	190,965
3954	2	0	0	0	0	11,573	5,468	17,041
3957	1	0	0	0	0	11,573	5,468	17,041
3958	2	0	0	0	0	11,573	5,468	17,041
3959	2	0	0	0	0	11,573	5,468	17,041
3960	1	0	0	0	0	11,573	5,468	17,041
3963	1	0	0	0	0	11,573	5,468	17,041
3964	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3965	1	0	0	0	0	11,573	5,468	17,041
3966	1	0	0	0	0	11,573	5,468	17,041
3969	3	0	0	0	0	11,573	5,468	17,041
3970	10	0	0	0	0	11,573	24,204	35,777
3971	15	0	0	0	0	11,573	23,192	34,765
3972	2	0	0	0	0	11,573	5,468	17,041
3973	29	0	0	0	0	11,573	46,384	57,957
3974	16	0	0	0	0	11,573	23,192	34,765
3975	1	0	0	0	0	11,573	5,468	17,041
3976	1	0	0	0	0	11,573	5,468	17,041
3977	2	0	0	0	0	11,573	5,468	17,041
3978	1	0	0	0	0	11,573	5,468	17,041
3979	1	0	0	0	0	11,573	5,468	17,041
3980	1	0	0	0	0	11,573	5,468	17,041
3981	8	0	0	0	0	11,573	16,136	27,709
3982	96	2	2	0	0	11,573	130,860	142,433
3983	2	0	0	0	0	11,573	5,468	17,041
3984	4	0	0	0	0	11,573	8,068	19,641
3988	2	0	0	0	0	11,573	5,468	17,041
3989	1	0	0	0	0	11,573	5,468	17,041
3990	11	0	0	0	0	11,573	24,204	35,777
3991	10	0	0	0	0	11,573	24,204	35,777
3992	5	0	0	0	0	11,573	16,136	27,709
3993	1	0	0	0	0	11,573	5,468	17,041
3994	10	0	0	0	0	11,573	24,204	35,777
3995	1	0	0	0	0	11,573	5,468	17,041
3996	3	0	0	0	0	11,573	5,468	17,041
3997	2	0	0	0	0	11,573	5,468	17,041
3998	1	0	0	0	0	11,573	5,468	17,041
3999	3	0	0	0	0	11,573	5,468	17,041
4000	7	0	0	0	0	11,573	16,136	27,709
4001	6	5	0	0	0	11,573	67,988	79,561
4002	37	0	0	0	0	11,573	47,794	59,367
4003	13	0	0	0	0	11,573	23,192	34,765
4004	168	2	2	0	0	11,573	130,860	142,433
4007	4	0	0	0	0	11,573	8,068	19,641
4008	13	0	0	0	0	11,573	23,192	34,765
4015	1	0	0	0	0	11,573	5,468	17,041
4018	1	0	0	0	0	11,573	5,468	17,041
4019	2	0	0	0	0	11,573	5,468	17,041
4020	3	0	0	0	0	11,573	5,468	17,041
4021	1	0	0	0	0	11,573	5,468	17,041
4022	1	0	0	0	0	11,573	5,468	17,041
4023	1	0	0	0	0	11,573	5,468	17,041
4024	1	0	0	0	0	11,573	5,468	17,041
4025	3	0	0	0	0	11,573	5,468	17,041
4027	1	0	0	0	0	11,573	5,468	17,041
4029	14	0	0	0	0	11,573	23,192	34,765

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4030	1	0	0	0	0	11,573	5,468	17,041
4031	1	0	0	0	0	11,573	5,468	17,041
4032	2	0	0	0	0	11,573	5,468	17,041
4033	1	0	0	0	0	11,573	5,468	17,041
4035	1	0	0	0	0	11,573	5,468	17,041
4037	1	0	0	0	0	11,573	5,468	17,041
4039	4	0	0	0	0	11,573	8,068	19,641
4042	1	0	0	0	0	11,573	5,468	17,041
4043	3	0	0	0	0	11,573	5,468	17,041
4044	1	0	0	0	0	11,573	5,468	17,041
4045	1	0	0	0	0	11,573	5,468	17,041
4046	1	0	0	0	0	11,573	5,468	17,041
4047	2	0	0	0	0	11,573	5,468	17,041
4048	4	0	0	0	0	11,573	8,068	19,641
4052	1	0	0	0	0	11,573	5,468	17,041
4053	3	0	0	0	0	11,573	5,468	17,041
4055	1	0	0	0	0	11,573	5,468	17,041
4064	1	0	0	0	0	11,573	5,468	17,041
4078	2	0	0	0	0	11,573	5,468	17,041
4082	2	0	0	0	0	11,573	5,468	17,041
4083	3	0	0	0	0	11,573	5,468	17,041
4084	1	0	0	0	0	11,573	5,468	17,041
4085	1	0	0	0	0	11,573	5,468	17,041
4086	1	0	0	0	0	11,573	5,468	17,041
4087	1	0	0	0	0	11,573	5,468	17,041
4088	1	0	0	0	0	11,573	5,468	17,041
4089	2	0	0	0	0	11,573	5,468	17,041
4091	1	0	0	0	0	11,573	5,468	17,041
4100	1	0	0	0	0	11,573	5,468	17,041
4106	1	0	0	0	0	11,573	5,468	17,041
4108	1	0	0	0	0	11,573	5,468	17,041
4109	2	0	0	0	0	11,573	5,468	17,041
4110	1	0	0	0	0	11,573	5,468	17,041
4111	2	0	0	0	0	11,573	5,468	17,041
4112	2	0	0	0	0	11,573	5,468	17,041
4113	1	0	0	0	0	11,573	5,468	17,041
4114	6	0	0	0	0	11,573	16,136	27,709
4115	11	0	0	0	0	11,573	24,204	35,777
4116	2	0	0	0	0	11,573	5,468	17,041
4117	1	0	0	0	0	11,573	5,468	17,041
4118	3	0	0	0	0	11,573	5,468	17,041
4119	10	0	0	0	0	11,573	24,204	35,777
4120	4	0	0	0	0	11,573	8,068	19,641
4123	1	0	0	0	0	11,573	5,468	17,041
4124	1	0	0	0	0	11,573	5,468	17,041
4126	3	0	0	0	0	11,573	5,468	17,041
4127	1	0	0	0	0	11,573	5,468	17,041
4130	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4131	2	0	0	0	0	11,573	5,468	17,041
4132	1	0	0	0	0	11,573	5,468	17,041
4133	4	0	0	0	0	11,573	8,068	19,641
4134	1	0	0	0	0	11,573	5,468	17,041
4135	1	0	0	0	0	11,573	5,468	17,041
4137	1	0	0	0	0	11,573	5,468	17,041
4138	1	0	0	0	0	11,573	5,468	17,041
4140	1	0	0	0	0	11,573	5,468	17,041
4141	1	0	0	0	0	11,573	5,468	17,041
4142	1	0	0	0	0	11,573	5,468	17,041
4143	1	0	0	0	0	11,573	5,468	17,041
4144	2	0	0	0	0	11,573	5,468	17,041
4145	2	0	0	0	0	11,573	5,468	17,041
4151	3	0	0	0	0	11,573	5,468	17,041
4152	4	0	0	0	0	11,573	8,068	19,641
4153	2	0	0	0	0	11,573	5,468	17,041
4156	3	0	0	0	0	11,573	5,468	17,041
4157	3	0	0	0	0	11,573	5,468	17,041
4158	3	0	0	0	0	11,573	5,468	17,041
4164	1	0	0	0	0	11,573	5,468	17,041
4165	2	0	0	0	0	11,573	5,468	17,041
4166	1	0	0	0	0	11,573	5,468	17,041
4167	1	0	0	0	0	11,573	5,468	17,041
4168	1	0	0	0	0	11,573	5,468	17,041
4170	1	0	0	0	0	11,573	5,468	17,041
4171	1	0	0	0	0	11,573	5,468	17,041
4173	1	0	0	0	0	11,573	5,468	17,041
4174	1	0	0	0	0	11,573	5,468	17,041
4183	3	0	0	0	0	11,573	5,468	17,041
4184	7	0	0	0	0	11,573	16,136	27,709
4185	1	0	0	0	0	11,573	5,468	17,041
4186	2	0	0	0	0	11,573	5,468	17,041
4187	1	0	0	0	0	11,573	5,468	17,041
4188	1	0	0	0	0	11,573	5,468	17,041
4191	1	0	0	0	0	11,573	5,468	17,041
4192	1	0	0	0	0	11,573	5,468	17,041
4193	2	0	0	0	0	11,573	5,468	17,041
4194	2	0	0	0	0	11,573	5,468	17,041
4196	2	0	0	0	0	11,573	5,468	17,041
4197	3	0	0	0	0	11,573	5,468	17,041
4203	3	0	0	0	0	11,573	5,468	17,041
4204	1	0	0	0	0	11,573	5,468	17,041
4205	1	0	0	0	0	11,573	5,468	17,041
4206	2	0	0	0	0	11,573	5,468	17,041
4207	1	0	0	0	0	11,573	5,468	17,041
4208	1	0	0	0	0	11,573	5,468	17,041
4212	1	0	0	0	0	11,573	5,468	17,041
4215	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4216	1	0	0	0	0	11,573	5,468	17,041
4223	200	14	0	0	0	11,573	90,871	102,444
4224	6	0	0	0	0	11,573	16,136	27,709
4225	1	0	0	0	0	11,573	5,468	17,041
4226	2	0	0	0	0	11,573	5,468	17,041
4227	1	0	0	0	0	11,573	5,468	17,041
4228	2	0	0	0	0	11,573	5,468	17,041
4230	1	0	0	0	0	11,573	5,468	17,041
4231	5	0	0	0	0	11,573	16,136	27,709
4233	1	0	0	0	0	11,573	5,468	17,041
4234	1	0	0	0	0	11,573	5,468	17,041
4236	2	0	0	0	0	11,573	5,468	17,041
4237	1	0	0	0	0	11,573	5,468	17,041
4238	2	0	0	0	0	11,573	5,468	17,041
4247	2	0	0	0	0	11,573	5,468	17,041
4248	1	0	0	0	0	11,573	5,468	17,041
4250	1	0	0	0	0	11,573	5,468	17,041
4251	33	6	13	0	0	11,573	657,261	668,834
4252	8	0	0	0	0	11,573	16,136	27,709
4253	1	0	0	0	0	11,573	5,468	17,041
4254	1	0	0	0	0	11,573	5,468	17,041
4258	1	0	0	0	0	11,573	5,468	17,041
4260	15	0	0	0	0	11,573	23,192	34,765
4261	1	0	0	0	0	11,573	5,468	17,041
4262	1	0	0	0	0	11,573	5,468	17,041
4263	1	0	0	0	0	11,573	5,468	17,041
4264	3	0	0	0	0	11,573	5,468	17,041
4267	2	0	0	0	0	11,573	5,468	17,041
4268	1	0	0	0	0	11,573	5,468	17,041
4269	1	0	0	0	0	11,573	5,468	17,041
4270	4	0	0	0	0	11,573	8,068	19,641
4271	1	0	0	0	0	11,573	5,468	17,041
4272	1	0	0	0	0	11,573	5,468	17,041
4273	2	0	0	0	0	11,573	5,468	17,041
4275	1	0	0	0	0	11,573	5,468	17,041
4282	3	0	0	0	0	11,573	5,468	17,041
4283	2	0	0	0	0	11,573	5,468	17,041
4295	1	0	0	0	0	11,573	5,468	17,041
4296	1	0	0	0	0	11,573	5,468	17,041
4297	2	0	0	0	0	11,573	5,468	17,041
4299	1	0	0	0	0	11,573	5,468	17,041
4300	47	2	4	0	0	11,573	243,563	255,136
4302	1	0	0	0	0	11,573	5,468	17,041
4303	11	0	0	0	0	11,573	24,204	35,777
4304	12	4	0	0	0	11,573	61,626	73,199
4305	1	0	0	0	0	11,573	5,468	17,041
4309	1	0	0	0	0	11,573	5,468	17,041
4310	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4312	1	0	0	0	0	11,573	5,468	17,041
4314	1	0	0	0	0	11,573	5,468	17,041
4315	1	0	0	0	0	11,573	5,468	17,041
4316	2	0	0	0	0	11,573	5,468	17,041
4318	1	0	0	0	0	11,573	5,468	17,041
4319	1	0	0	0	0	11,573	5,468	17,041
4320	1	0	0	0	0	11,573	5,468	17,041
4322	2	0	0	0	0	11,573	5,468	17,041
4323	4	0	0	0	0	11,573	8,068	19,641
4324	2	0	0	0	0	11,573	5,468	17,041
4325	1	0	0	0	0	11,573	5,468	17,041
4328	2	0	0	0	0	11,573	5,468	17,041
4329	1	0	0	0	0	11,573	5,468	17,041
4330	1	0	0	0	0	11,573	5,468	17,041
4331	1	0	0	0	0	11,573	5,468	17,041
4332	2	0	0	0	0	11,573	5,468	17,041
4333	2	0	0	0	0	11,573	5,468	17,041
4336	1	0	0	0	0	11,573	5,468	17,041
4338	1	0	0	0	0	11,573	5,468	17,041
4339	1	0	0	0	0	11,573	5,468	17,041
4340	2	0	0	0	0	11,573	5,468	17,041
4341	3	0	0	0	0	11,573	5,468	17,041
4342	2	0	4	0	0	11,573	172,748	184,321
4343	4	0	0	0	0	11,573	8,068	19,641
4345	3	0	0	0	0	11,573	5,468	17,041
4346	2	0	0	0	0	11,573	5,468	17,041
4347	2	0	0	0	0	11,573	5,468	17,041
4353	1	0	0	0	0	11,573	5,468	17,041
4354	4	0	0	0	0	11,573	8,068	19,641
4356	2	0	0	0	0	11,573	5,468	17,041
4357	2	0	0	0	0	11,573	5,468	17,041
4358	0	2	0	0	0	11,573	47,220	58,793
4359	1	2	0	0	0	11,573	47,958	59,531
4361	2	0	0	0	0	11,573	5,468	17,041
4362	2	0	0	0	0	11,573	5,468	17,041
4363	1	0	0	0	0	11,573	5,468	17,041
4365	4	0	0	0	0	11,573	8,068	19,641
4366	1	0	0	0	0	11,573	5,468	17,041
4367	1	0	0	0	0	11,573	5,468	17,041
4369	3	0	0	0	0	11,573	5,468	17,041
4370	11	2	0	0	0	11,573	49,434	61,007
4375	1	0	0	0	0	11,573	5,468	17,041
4376	13	0	0	0	0	11,573	23,192	34,765
4377	15	0	0	0	0	11,573	23,192	34,765
4378	2	0	0	0	0	11,573	5,468	17,041
4379	1	0	0	0	0	11,573	5,468	17,041
4380	1	0	0	0	0	11,573	5,468	17,041
4383	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4386	1	0	0	0	0	11,573	5,468	17,041
4387	1	0	0	0	0	11,573	5,468	17,041
4390	1	0	0	0	0	11,573	5,468	17,041
4391	2	0	0	0	0	11,573	5,468	17,041
4396	6	0	0	0	0	11,573	16,136	27,709
4397	1	0	0	0	0	11,573	5,468	17,041
4399	1	0	0	0	0	11,573	5,468	17,041
4400	5	0	0	0	0	11,573	16,136	27,709
4403	2	0	0	0	0	11,573	5,468	17,041
4404	1	0	0	0	0	11,573	5,468	17,041
4407	1	0	0	0	0	11,573	5,468	17,041
4408	2	0	0	0	0	11,573	5,468	17,041
4409	1	0	0	0	0	11,573	5,468	17,041
4410	1	0	0	0	0	11,573	5,468	17,041
4412	2	0	0	0	0	11,573	5,468	17,041
4413	1	0	0	0	0	11,573	5,468	17,041
4414	3	0	0	0	0	11,573	5,468	17,041
4416	1	4	0	0	0	11,573	60,150	71,723
4417	1	0	0	0	0	11,573	5,468	17,041
4418	1	0	0	0	0	11,573	5,468	17,041
4419	1	0	0	0	0	11,573	5,468	17,041
4420	2	0	0	0	0	11,573	5,468	17,041
4421	1	0	0	0	0	11,573	5,468	17,041
4422	3	0	0	0	0	11,573	5,468	17,041
4423	4	4	0	0	0	11,573	60,150	71,723
4425	1	0	0	0	0	11,573	5,468	17,041
4426	1	0	0	0	0	11,573	5,468	17,041
4427	29	0	0	0	0	11,573	46,384	57,957
4428	1	0	0	0	0	11,573	5,468	17,041
4432	1	0	0	0	0	11,573	5,468	17,041
4435	4	0	0	0	0	11,573	8,068	19,641
4436	3	0	0	0	0	11,573	5,468	17,041
4439	1	0	0	0	0	11,573	5,468	17,041
4440	3	0	0	0	0	11,573	5,468	17,041
4441	3	0	0	0	0	11,573	5,468	17,041
4445	2	0	0	0	0	11,573	5,468	17,041
4446	2	0	0	0	0	11,573	5,468	17,041
4447	1	0	0	0	0	11,573	5,468	17,041
4449	7	0	0	0	0	11,573	16,136	27,709
4468	2	0	0	0	0	11,573	5,468	17,041
4469	1	0	0	0	0	11,573	5,468	17,041
4470	4	0	0	0	0	11,573	8,068	19,641
4471	3	0	0	0	0	11,573	5,468	17,041
4475	2	0	0	0	0	11,573	5,468	17,041
4476	2	0	0	0	0	11,573	5,468	17,041
4482	9	0	0	0	0	11,573	24,204	35,777
4483	4	0	0	0	0	11,573	8,068	19,641
4485	2	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
4489	3	0	0	0	0	11,573	5,468	17,041
4490	1	0	0	0	0	11,573	5,468	17,041
4492	2	0	0	0	0	11,573	5,468	17,041
4496	1	0	0	0	0	11,573	5,468	17,041
4497	1	0	0	0	0	11,573	5,468	17,041
4498	1	0	0	0	0	11,573	5,468	17,041
4501	2	0	0	0	0	11,573	5,468	17,041
4502	3	0	0	0	0	11,573	5,468	17,041
4503	59	0	2	0	0	11,573	136,530	148,103
4504	1	0	0	0	0	11,573	5,468	17,041
4512	2	0	0	0	0	11,573	5,468	17,041
4513	2	0	0	0	0	11,573	5,468	17,041
4518	3	0	0	0	0	11,573	5,468	17,041
4520	2	0	0	0	0	11,573	5,468	17,041
4521	1	0	0	0	0	11,573	5,468	17,041
4522	1	0	0	0	0	11,573	5,468	17,041
4523	3	0	0	0	0	11,573	5,468	17,041
4524	1	0	0	0	0	11,573	5,468	17,041
4525	1	0	0	0	0	11,573	5,468	17,041
4528	4	0	0	0	0	11,573	8,068	19,641
4529	21	0	0	0	0	11,573	24,602	36,175
4530	2	0	0	0	0	11,573	5,468	17,041
4531	1	0	0	0	0	11,573	5,468	17,041
4532	1	0	0	0	0	11,573	5,468	17,041
4535	63	4	0	0	0	11,573	91,526	103,099
4536	1	0	0	0	0	11,573	5,468	17,041
4537	11	0	0	0	0	11,573	24,204	35,777
4538	2	0	0	0	0	11,573	5,468	17,041
4541	2	0	0	0	0	11,573	5,468	17,041
4546	5	0	0	0	0	11,573	16,136	27,709
4547	2	0	0	0	0	11,573	5,468	17,041
4553	1	0	0	0	0	11,573	5,468	17,041
4561	1	0	0	0	0	11,573	5,468	17,041
4578	1	0	0	0	0	11,573	5,468	17,041
4579	1	0	0	0	0	11,573	5,468	17,041
4582	1	0	0	0	0	11,573	5,468	17,041
4588	2	0	0	0	0	11,573	5,468	17,041
4590	1	0	0	0	0	11,573	5,468	17,041
4603	1	0	0	0	0	11,573	5,468	17,041
4605	1	0	0	0	0	11,573	5,468	17,041
4606	1	0	0	0	0	11,573	5,468	17,041
4620	1	0	0	0	0	11,573	5,468	17,041
4623	1	0	0	0	0	11,573	5,468	17,041
4630	0	0	0	0	0	11,573	0	11,573
4631	3	0	0	0	0	11,573	5,468	17,041
4632	3	0	0	0	0	11,573	5,468	17,041
4636	1	0	0	0	0	11,573	5,468	17,041
4637	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4643	2	0	0	0	0	11,573	5,468	17,041
4644	3	0	0	0	0	11,573	5,468	17,041
4645	1	0	0	0	0	11,573	5,468	17,041
4646	1	0	0	0	0	11,573	5,468	17,041
4647	2	0	0	0	0	11,573	5,468	17,041
4648	1	0	0	0	0	11,573	5,468	17,041
4649	1	0	0	0	0	11,573	5,468	17,041
4653	1	0	0	0	0	11,573	5,468	17,041
4655	1	0	0	0	0	11,573	5,468	17,041
4659	2	2	0	0	0	11,573	47,958	59,531
4662	2	0	0	0	0	11,573	5,468	17,041
4663	27	2	0	3	0	11,573	209,322	220,895
4664	2	0	0	0	0	11,573	5,468	17,041
4665	2	0	0	0	0	11,573	5,468	17,041
4671	1	0	0	0	0	11,573	5,468	17,041
4676	4	0	0	0	0	11,573	8,068	19,641
4677	1	0	0	0	0	11,573	5,468	17,041
4678	1	0	0	0	0	11,573	5,468	17,041
4679	1	0	0	0	0	11,573	5,468	17,041
4680	1	0	0	0	0	11,573	5,468	17,041
4683	1	0	0	0	0	11,573	5,468	17,041
4684	2	0	0	0	0	11,573	5,468	17,041
4685	1	0	0	0	0	11,573	5,468	17,041
4689	1	0	0	0	0	11,573	5,468	17,041
4691	1	0	0	0	0	11,573	5,468	17,041
4692	3	0	0	0	0	11,573	5,468	17,041
4704	1	0	0	0	0	11,573	5,468	17,041
4705	1	0	0	0	0	11,573	5,468	17,041
4706	1	0	0	0	0	11,573	5,468	17,041
4710	2	0	0	0	0	11,573	5,468	17,041
4713	1	0	0	0	0	11,573	5,468	17,041
4720	1	0	0	0	0	11,573	5,468	17,041
4721	1	0	0	0	0	11,573	5,468	17,041
4722	4	0	0	0	0	11,573	8,068	19,641
4738	1	0	0	0	0	11,573	5,468	17,041
4739	1	0	0	0	0	11,573	5,468	17,041
4740	1	0	0	0	0	11,573	5,468	17,041
4744	2	0	0	0	0	11,573	5,468	17,041
4745	1	0	0	0	0	11,573	5,468	17,041
4752	6	0	0	0	0	11,573	16,136	27,709
4754	1	0	0	0	0	11,573	5,468	17,041
4760	1	0	0	0	0	11,573	5,468	17,041
4761	1	0	0	0	0	11,573	5,468	17,041
4762	2	0	0	0	0	11,573	5,468	17,041
4768	1	0	0	0	0	11,573	5,468	17,041
4773	2	0	0	0	0	11,573	5,468	17,041
4775	1	0	0	0	0	11,573	5,468	17,041
4781	1	0	0	0	0	11,573	5,468	17,041

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 1: 0 TO 1,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATIO	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
4787	1	0	0	0	0	11,573	5,468	17,041
4794	2	0	0	0	0	11,573	5,468	17,041
4799	2	0	0	0	0	11,573	5,468	17,041
4800	1	0	0	0	0	11,573	5,468	17,041
4801	19	0	0	0	0	11,573	23,897	35,470
4802	12	0	0	0	0	11,573	24,204	35,777
4803	12	1	0	0	0	11,573	46,734	58,307
4804	0	2	0	0	0	11,573	47,220	58,793
4805	1	0	0	0	0	11,573	5,468	17,041
4806	2	0	0	0	0	11,573	5,468	17,041
4808	4	0	0	0	0	11,573	8,068	19,641
4809	2	0	0	0	0	11,573	5,468	17,041
4810	1	0	0	0	0	11,573	5,468	17,041
4813	3	0	0	0	0	11,573	5,468	17,041
4819	1	0	0	0	0	11,573	5,468	17,041
4820	2	0	0	0	0	11,573	5,468	17,041
4821	1	0	0	0	0	11,573	5,468	17,041
4822	2	0	0	0	0	11,573	5,468	17,041
4823	1	0	0	0	0	11,573	5,468	17,041
4824	1	0	0	0	0	11,573	5,468	17,041
4825	1	0	0	0	0	11,573	5,468	17,041
4826	2	0	0	0	0	11,573	5,468	17,041
4829	4	0	0	0	0	11,573	8,068	19,641
4830	1	0	0	0	0	11,573	5,468	17,041
4836	2	0	0	0	0	11,573	5,468	17,041
4838	1	0	0	0	0	11,573	5,468	17,041
4856	1	0	0	0	0	11,573	5,468	17,041
4863	1	0	0	0	0	11,573	5,468	17,041
4869	1	0	0	0	0	11,573	5,468	17,041
4871	2	0	0	0	0	11,573	5,468	17,041
4877	1	0	0	0	0	11,573	5,468	17,041
4878	1	0	0	0	0	11,573	5,468	17,041
4899	3	0	0	0	0	11,573	5,468	17,041
4915	48	5	6	0	3	11,573	532,558	544,131
4916	318	29	4	1	1	11,573	400,884	412,457
4937	1	0	0	0	0	11,573	5,468	17,041
4940	1	0	0	0	0	11,573	5,468	17,041
4942	1	0	0	0	0	11,573	5,468	17,041
4945	8	0	0	0	0	11,573	16,136	27,709
4948	2	0	0	0	0	11,573	5,468	17,041
4949	1	0	0	0	0	11,573	5,468	17,041
4952	2	0	0	0	0	11,573	5,468	17,041
4953	3	0	0	0	0	11,573	5,468	17,041
4954	1	0	0	0	0	11,573	5,468	17,041
4955	1	0	0	0	0	11,573	5,468	17,041
4957	4	0	0	0	0	11,573	8,068	19,641
4966	6	0	0	0	0	11,573	16,136	27,709
4967	1	0	0	0	0	11,573	5,468	17,041

[illegible]

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 2: 1,001 TO 2,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
2533	3	0	0	0	0	24,492	5,468	29,960
2534	2	0	0	0	0	24,492	5,468	29,960
2537	1	0	0	0	0	24,492	5,468	29,960
2538	6	0	0	0	0	24,492	16,136	40,628
2547	1	0	0	0	0	24,492	5,468	29,960
2551	1	0	0	0	0	24,492	5,468	29,960
2552	3	0	0	0	0	24,492	5,468	29,960
2553	1	0	0	0	0	24,492	5,468	29,960
2555	1	0	0	0	0	24,492	5,468	29,960
2564	1	0	0	0	0	24,492	5,468	29,960
2565	1	0	0	0	0	24,492	5,468	29,960
2577	2	0	0	0	0	24,492	5,468	29,960
2578	2	0	0	0	0	24,492	5,468	29,960
2580	2	0	0	0	0	24,492	5,468	29,960
2581	4	0	0	0	0	24,492	8,068	32,560
2593	1	0	0	0	0	24,492	5,468	29,960
2594	1	0	0	0	0	24,492	5,468	29,960
2595	2	0	0	0	0	24,492	5,468	29,960
2597	1	0	0	0	0	24,492	5,468	29,960
2611	3	0	0	0	0	24,492	5,468	29,960
2612	2	0	0	0	0	24,492	5,468	29,960
2613	3	0	0	0	0	24,492	5,468	29,960
2614	1	0	0	0	0	24,492	5,468	29,960
2628	3	0	0	0	0	24,492	5,468	29,960
2647	20	2	0	0	0	24,492	50,910	75,402
2655	2	0	0	0	0	24,492	5,468	29,960
2656	1	0	0	0	0	24,492	5,468	29,960
2657	1	0	0	0	0	24,492	5,468	29,960
2659	1	0	0	0	0	24,492	5,468	29,960
2664	1	0	0	0	0	24,492	5,468	29,960
2684	1	0	0	0	0	24,492	5,468	29,960
2685	13	0	0	0	0	24,492	23,192	47,684
2686	1	0	0	0	0	24,492	5,468	29,960
2702	1	0	0	0	0	24,492	5,468	29,960
2720	2	0	0	0	0	24,492	5,468	29,960
2730	2	0	0	0	0	24,492	5,468	29,960
2731	1	0	0	0	0	24,492	5,468	29,960
2734	1	0	0	0	0	24,492	5,468	29,960
2767	1	0	0	0	0	24,492	5,468	29,960
2794	2	0	0	0	0	24,492	5,468	29,960
2807	1	0	0	0	0	24,492	5,468	29,960
2850	2	0	0	0	0	24,492	5,468	29,960
2864	1	0	0	0	0	24,492	5,468	29,960
2868	1	0	0	0	0	24,492	5,468	29,960
2873	43	2	0	0	0	24,492	75,578	100,070
2875	2	0	0	0	0	24,492	5,468	29,960
2881	2	0	0	0	0	24,492	5,468	29,960
2884	1	0	0	0	0	24,492	5,468	29,960

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 2: 1,001 TO 2,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
2890	3	0	0	0	0	24,492	5,468	29,960
2894	2	0	0	0	0	24,492	5,468	29,960
2897	2	0	0	0	0	24,492	5,468	29,960
2898	1	0	0	0	0	24,492	5,468	29,960
2899	2	0	0	0	0	24,492	5,468	29,960
2900	1	0	0	0	0	24,492	5,468	29,960
2905	7	0	0	0	0	24,492	16,136	40,628
2946	1	0	0	0	0	24,492	5,468	29,960
2947	1	0	0	0	0	24,492	5,468	29,960
2948	1	1	0	0	0	24,492	45,258	69,750
2949	3	0	0	0	0	24,492	5,468	29,960
2951	1	0	0	0	0	24,492	5,468	29,960
2952	1	0	0	0	0	24,492	5,468	29,960
2957	4	0	0	0	0	24,492	8,068	32,560
2981	3	0	0	0	0	24,492	5,468	29,960
3009	3	0	0	0	0	24,492	5,468	29,960
3022	1	0	0	0	0	24,492	5,468	29,960
3027	0	2	0	0	0	24,492	47,220	71,712
3066	1	0	0	0	0	24,492	5,468	29,960
3073	2	0	0	0	0	24,492	5,468	29,960
3076	5	0	0	0	0	24,492	16,136	40,628
3078	1	0	0	0	0	24,492	5,468	29,960
3086	1	0	0	0	0	24,492	5,468	29,960
3143	1	0	0	0	0	24,492	5,468	29,960
3146	3	0	0	0	0	24,492	5,468	29,960
3154	2	0	0	0	0	24,492	5,468	29,960
3162	2	0	0	0	0	24,492	5,468	29,960
3208	1	0	0	0	0	24,492	5,468	29,960
3214	2	0	0	0	0	24,492	5,468	29,960
3215	2	0	0	0	0	24,492	5,468	29,960
3216	1	0	0	0	0	24,492	5,468	29,960
3217	1	0	0	0	0	24,492	5,468	29,960
3219	1	0	0	0	0	24,492	5,468	29,960
3223	1	0	0	0	0	24,492	5,468	29,960
3224	2	0	0	0	0	24,492	5,468	29,960
3233	1	0	0	0	0	24,492	5,468	29,960
3238	2	0	0	0	0	24,492	5,468	29,960
3278	1	0	0	0	0	24,492	5,468	29,960
3327	4	0	0	0	0	24,492	8,068	32,560
3365	19	0	0	0	0	24,492	23,897	48,389
3420	3	0	0	0	0	24,492	5,468	29,960
3485	1	0	0	0	0	24,492	5,468	29,960
3614	2	0	0	0	0	24,492	5,468	29,960
3647	2	0	0	0	0	24,492	5,468	29,960
3648	9	0	0	0	0	24,492	24,204	48,696
3716	2	0	0	0	0	24,492	5,468	29,960
3717	1	0	0	0	0	24,492	5,468	29,960
3750	1	0	0	0	0	24,492	5,468	29,960

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 2: 1,001 TO 2,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
3792	1	0	0	0	0	24,492	5,468	29,960
3796	1	0	0	0	0	24,492	5,468	29,960
3810	2	0	0	0	0	24,492	5,468	29,960
3811	1	0	0	0	0	24,492	5,468	29,960
3812	1	0	0	0	0	24,492	5,468	29,960
3814	2	0	0	0	0	24,492	5,468	29,960
3817	1	0	0	0	0	24,492	5,468	29,960
3819	2	0	0	0	0	24,492	5,468	29,960
3820	2	0	0	0	0	24,492	5,468	29,960
3824	7	0	0	0	0	24,492	16,136	40,628
3825	7	0	0	0	0	24,492	16,136	40,628
3827	1	0	0	0	0	24,492	5,468	29,960
3828	2	0	0	0	0	24,492	5,468	29,960
3829	1	0	0	0	0	24,492	5,468	29,960
3833	1	0	0	0	0	24,492	5,468	29,960
3837	1	0	0	0	0	24,492	5,468	29,960
3838	3	0	0	0	0	24,492	5,468	29,960
3842	1	0	0	0	0	24,492	5,468	29,960
3843	1	0	0	0	0	24,492	5,468	29,960
3844	2	0	0	0	0	24,492	5,468	29,960
3845	2	0	0	0	0	24,492	5,468	29,960
3846	2	0	0	0	0	24,492	5,468	29,960
3864	1	0	0	0	0	24,492	5,468	29,960
3870	1	0	0	0	0	24,492	5,468	29,960
3873	1	0	0	0	0	24,492	5,468	29,960
3874	2	0	0	0	0	24,492	5,468	29,960
3875	2	0	0	0	0	24,492	5,468	29,960
3876	3	0	0	0	0	24,492	5,468	29,960
3883	2	0	0	0	0	24,492	5,468	29,960
3885	1	0	0	0	0	24,492	5,468	29,960
3886	1	0	0	0	0	24,492	5,468	29,960
3887	1	0	0	0	0	24,492	5,468	29,960
3891	2	0	0	0	0	24,492	5,468	29,960
3894	1	0	0	0	0	24,492	5,468	29,960
3910	8	0	0	0	0	24,492	16,136	40,628
3911	2	0	0	0	0	24,492	5,468	29,960
3931	2	0	0	0	0	24,492	5,468	29,960
3936	1	0	0	0	0	24,492	5,468	29,960
3938	27	4	50	0	5	24,492	2,465,683	2,490,175
3939	31	3	0	0	0	24,492	96,304	120,796
3940	1	0	0	0	0	24,492	5,468	29,960
3962	2	0	0	0	0	24,492	5,468	29,960
4011	1	0	0	0	0	24,492	5,468	29,960
4012	1	0	0	0	0	24,492	5,468	29,960
4034	2	0	0	0	0	24,492	5,468	29,960
4040	1	0	0	0	0	24,492	5,468	29,960
4041	1	0	0	0	0	24,492	5,468	29,960
4056	1	0	0	0	0	24,492	5,468	29,960

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 2: 1,001 TO 2,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4058	2	0	0	0	0	24,492	5,468	29,960
4059	2	0	0	0	0	24,492	5,468	29,960
4060	2	0	0	0	0	24,492	5,468	29,960
4061	1	0	0	0	0	24,492	5,468	29,960
4063	1	0	0	0	0	24,492	5,468	29,960
4071	3	0	0	0	0	24,492	5,468	29,960
4072	2	0	0	0	0	24,492	5,468	29,960
4077	2	0	0	0	0	24,492	5,468	29,960
4090	1	0	0	0	0	24,492	5,468	29,960
4092	1	0	0	0	0	24,492	5,468	29,960
4093	1	0	0	0	0	24,492	5,468	29,960
4097	1	0	0	0	0	24,492	5,468	29,960
4099	3	0	0	0	0	24,492	5,468	29,960
4105	1	0	0	0	0	24,492	5,468	29,960
4147	2	0	0	0	0	24,492	5,468	29,960
4159	2	0	0	0	0	24,492	5,468	29,960
4160	2	0	0	0	0	24,492	5,468	29,960
4161	7	0	0	0	0	24,492	16,136	40,628
4163	2	0	0	0	0	24,492	5,468	29,960
4176	2	0	0	0	0	24,492	5,468	29,960
4177	1	0	0	0	0	24,492	5,468	29,960
4178	2	0	0	0	0	24,492	5,468	29,960
4179	107	0	2	6	0	24,492	501,078	525,570
4180	18	1	0	0	0	24,492	48,210	72,702
4181	2	0	0	0	0	24,492	5,468	29,960
4199	20	1	0	0	0	24,492	48,210	72,702
4200	3	0	0	0	0	24,492	5,468	29,960
4201	51	0	0	0	0	24,492	49,909	74,401
4209	2	0	0	0	0	24,492	5,468	29,960
4211	1	0	0	0	0	24,492	5,468	29,960
4213	4	0	0	0	0	24,492	8,068	32,560
4229	1	0	0	0	0	24,492	5,468	29,960
4235	1	0	0	0	0	24,492	5,468	29,960
4243	25	2	0	0	0	24,492	52,386	76,878
4244	1	0	0	0	0	24,492	5,468	29,960
4256	2	0	0	0	0	24,492	5,468	29,960
4257	1	0	0	0	0	24,492	5,468	29,960
4259	1	0	0	0	0	24,492	5,468	29,960
4266	3	0	0	0	0	24,492	5,468	29,960
4274	1	0	0	0	0	24,492	5,468	29,960
4278	4	0	0	0	0	24,492	8,068	32,560
4291	1	0	0	0	0	24,492	5,468	29,960
4301	1	0	0	0	0	24,492	5,468	29,960
4335	1	0	0	0	0	24,492	5,468	29,960
4337	2	2	40	0	6	24,492	2,092,884	2,117,376
4344	2	0	0	0	0	24,492	5,468	29,960
4348	2	0	0	0	0	24,492	5,468	29,960
4349	1	0	0	0	0	24,492	5,468	29,960

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 2: 1,001 TO 2,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4350	58	4	0	0	0	24,492	90,821	115,313
4351	3	0	0	0	0	24,492	5,468	29,960
4364	1	0	0	0	0	24,492	5,468	29,960
4382	1	0	0	0	0	24,492	5,468	29,960
4392	1	0	0	0	0	24,492	5,468	29,960
4393	1	0	0	0	0	24,492	5,468	29,960
4401	1	0	0	0	0	24,492	5,468	29,960
4402	1	0	0	0	0	24,492	5,468	29,960
4411	4	0	0	0	0	24,492	8,068	32,560
4431	3	0	0	0	0	24,492	5,468	29,960
4437	6	0	0	0	0	24,492	16,136	40,628
4438	4	0	0	0	0	24,492	8,068	32,560
4442	2	0	0	0	0	24,492	5,468	29,960
4443	5	0	0	0	0	24,492	16,136	40,628
4444	1	0	0	0	0	24,492	5,468	29,960
4450	8	2	0	0	0	24,492	48,696	73,188
4451	2	0	0	0	0	24,492	5,468	29,960
4452	2	0	0	0	0	24,492	5,468	29,960
4453	1	0	0	0	0	24,492	5,468	29,960
4454	1	0	0	0	0	24,492	5,468	29,960
4455	1	0	0	0	0	24,492	5,468	29,960
4456	2	0	0	0	0	24,492	5,468	29,960
4457	1	0	0	0	0	24,492	5,468	29,960
4458	2	0	0	0	0	24,492	5,468	29,960
4464	1	0	0	0	0	24,492	5,468	29,960
4465	1	0	0	0	0	24,492	5,468	29,960
4466	2	0	0	0	0	24,492	5,468	29,960
4467	2	0	0	0	0	24,492	5,468	29,960
4472	10	0	0	0	0	24,492	24,204	48,696
4473	4	0	0	0	0	24,492	8,068	32,560
4477	7	0	0	0	0	24,492	16,136	40,628
4480	3	0	0	0	0	24,492	5,468	29,960
4481	1	0	0	0	0	24,492	5,468	29,960
4484	1	0	0	0	0	24,492	5,468	29,960
4486	1	0	0	0	0	24,492	5,468	29,960
4487	5	0	0	0	0	24,492	16,136	40,628
4488	4	0	0	0	0	24,492	8,068	32,560
4491	4	0	0	0	0	24,492	8,068	32,560
4495	1	0	0	0	0	24,492	5,468	29,960
4500	1	0	0	0	0	24,492	5,468	29,960
4507	3	0	0	0	0	24,492	5,468	29,960
4508	1	0	0	0	0	24,492	5,468	29,960
4509	5	0	0	0	0	24,492	16,136	40,628
4511	8	0	0	0	0	24,492	16,136	40,628
4533	1	0	0	0	0	24,492	5,468	29,960
4539	1	0	0	0	0	24,492	5,468	29,960
4548	1	0	0	0	0	24,492	5,468	29,960
4552	1	0	0	0	0	24,492	5,468	29,960

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 2: 1,001 TO 2,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
4554	1	0	0	0	0	24,492	5,468	29,960
4556	6	0	0	0	0	24,492	16,136	40,628
4558	3	0	0	0	0	24,492	5,468	29,960
4559	6	0	0	0	0	24,492	16,136	40,628
4562	1	0	0	0	0	24,492	5,468	29,960
4563	1	0	0	0	0	24,492	5,468	29,960
4564	2	0	0	0	0	24,492	5,468	29,960
4565	1	0	0	0	0	24,492	5,468	29,960
4566	2	0	0	0	0	24,492	5,468	29,960
4568	1	0	0	0	0	24,492	5,468	29,960
4569	5	0	0	0	0	24,492	16,136	40,628
4570	5	0	0	0	0	24,492	16,136	40,628
4571	2	0	0	0	0	24,492	5,468	29,960
4572	4	0	0	0	0	24,492	8,068	32,560
4573	2	0	0	0	0	24,492	5,468	29,960
4574	2	0	0	0	0	24,492	5,468	29,960
4575	1	0	0	0	0	24,492	5,468	29,960
4584	1	0	0	0	0	24,492	5,468	29,960
4586	1	0	0	0	0	24,492	5,468	29,960
4587	1	0	0	0	0	24,492	5,468	29,960
4591	1	0	0	0	0	24,492	5,468	29,960
4593	5	0	0	0	0	24,492	16,136	40,628
4594	1	0	0	0	0	24,492	5,468	29,960
4596	2	0	0	0	0	24,492	5,468	29,960
4597	1	0	0	0	0	24,492	5,468	29,960
4598	7	0	0	0	0	24,492	16,136	40,628
4599	1	0	0	0	0	24,492	5,468	29,960
4600	1	0	0	0	0	24,492	5,468	29,960
4601	1	0	0	0	0	24,492	5,468	29,960
4602	1	0	0	0	0	24,492	5,468	29,960
4610	1	0	0	0	0	24,492	5,468	29,960
4611	1	0	0	0	0	24,492	5,468	29,960
4612	1	0	0	0	0	24,492	5,468	29,960
4613	5	0	0	0	0	24,492	16,136	40,628
4614	2	0	0	0	0	24,492	5,468	29,960
4634	3	0	0	0	0	24,492	5,468	29,960
4635	2	0	0	0	0	24,492	5,468	29,960
4639	1	0	0	0	0	24,492	5,468	29,960
4652	1	0	0	0	0	24,492	5,468	29,960
4658	1	0	0	0	0	24,492	5,468	29,960
4682	1	0	0	0	0	24,492	5,468	29,960
4693	2	0	0	0	0	24,492	5,468	29,960
4695	1	0	0	0	0	24,492	5,468	29,960
4699	1	0	0	0	0	24,492	5,468	29,960
4700	1	0	0	0	0	24,492	5,468	29,960
4702	1	0	0	0	0	24,492	5,468	29,960
4707	8	0	0	0	0	24,492	16,136	40,628
4717	2	0	0	0	0	24,492	5,468	29,960

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 2: 1,001 TO 2,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4718	1	0	0	0	0	24,492	5,468	29,960
4724	1	0	0	0	0	24,492	5,468	29,960
4725	2	0	0	0	0	24,492	5,468	29,960
4726	4	0	0	0	0	24,492	8,068	32,560
4727	1	0	0	0	0	24,492	5,468	29,960
4728	1	0	0	0	0	24,492	5,468	29,960
4730	1	0	0	0	0	24,492	5,468	29,960
4731	1	0	0	0	0	24,492	5,468	29,960
4736	3	0	0	0	0	24,492	5,468	29,960
4737	1	0	0	0	0	24,492	5,468	29,960
4741	2	0	0	0	0	24,492	5,468	29,960
4746	1	0	0	0	0	24,492	5,468	29,960
4748	1	0	0	0	0	24,492	5,468	29,960
4753	7	0	0	0	0	24,492	16,136	40,628
4759	1	0	0	0	0	24,492	5,468	29,960
4771	1	0	0	0	0	24,492	5,468	29,960
4774	1	0	0	0	0	24,492	5,468	29,960
4778	2	0	0	0	0	24,492	5,468	29,960
4779	1	0	0	0	0	24,492	5,468	29,960
4783	1	0	0	0	0	24,492	5,468	29,960
4785	1	0	0	0	0	24,492	5,468	29,960
4786	7	0	0	0	0	24,492	16,136	40,628
4788	1	0	0	0	0	24,492	5,468	29,960
4789	2	0	0	0	0	24,492	5,468	29,960
4790	2	0	0	0	0	24,492	5,468	29,960
4791	2	0	0	0	0	24,492	5,468	29,960
4796	1	0	0	0	0	24,492	5,468	29,960
4798	4	0	0	0	0	24,492	8,068	32,560
4807	1	0	0	0	0	24,492	5,468	29,960
4811	2	0	0	0	0	24,492	5,468	29,960
4818	2	0	0	0	0	24,492	5,468	29,960
4831	1	0	0	0	0	24,492	5,468	29,960
4835	1	0	0	0	0	24,492	5,468	29,960
4837	1	0	0	0	0	24,492	5,468	29,960
4839	1	0	0	0	0	24,492	5,468	29,960
4844	6	0	0	0	0	24,492	16,136	40,628
4845	1	0	0	0	0	24,492	5,468	29,960
4847	1	0	0	0	0	24,492	5,468	29,960
4848	1	0	0	0	0	24,492	5,468	29,960
4851	1	0	0	0	0	24,492	5,468	29,960
4852	1	0	0	0	0	24,492	5,468	29,960
4867	4	0	0	0	0	24,492	8,068	32,560
4868	1	0	0	0	0	24,492	5,468	29,960
4893	1	0	0	0	0	24,492	5,468	29,960
4894	1	0	0	0	0	24,492	5,468	29,960
4904	1	0	0	0	0	24,492	5,468	29,960
4912	1	0	0	0	0	24,492	5,468	29,960
4924	2	0	0	0	0	24,492	5,468	29,960

[illegible]

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 3: 2,001 TO 4,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
2549	1	0	0	0	0	49,500	5,468	54,968
2550	1	0	0	0	0	49,500	5,468	54,968
2554	1	0	0	0	0	49,500	5,468	54,968
2568	3	0	0	0	0	49,500	5,468	54,968
2615	1	0	0	0	0	49,500	5,468	54,968
2618	10	0	0	0	0	49,500	24,204	73,704
2619	1	0	0	0	0	49,500	5,468	54,968
2626	4	0	0	0	0	49,500	8,068	57,568
2637	7	0	0	0	0	49,500	16,136	65,636
2638	2	0	0	0	0	49,500	5,468	54,968
2641	4	0	0	0	0	49,500	8,068	57,568
2642	2	0	0	0	0	49,500	5,468	54,968
2653	1	0	0	0	0	49,500	5,468	54,968
2654	3	0	0	0	0	49,500	5,468	54,968
2660	1	0	0	0	0	49,500	5,468	54,968
2662	1	0	0	0	0	49,500	5,468	54,968
2681	6	0	0	0	0	49,500	16,136	65,636
2692	5	0	0	0	0	49,500	16,136	65,636
2693	11	0	0	0	0	49,500	24,204	73,704
2704	1	0	0	0	0	49,500	5,468	54,968
2705	2	0	0	0	0	49,500	5,468	54,968
2706	1	0	0	0	0	49,500	5,468	54,968
2708	1	0	0	0	0	49,500	5,468	54,968
2710	3	0	0	0	0	49,500	5,468	54,968
2711	2	0	0	0	0	49,500	5,468	54,968
2712	1	0	0	0	0	49,500	5,468	54,968
2713	1	0	0	0	0	49,500	5,468	54,968
2716	4	0	0	0	0	49,500	8,068	57,568
2746	1	0	0	0	0	49,500	5,468	54,968
2755	2	0	0	0	0	49,500	5,468	54,968
2756	1	0	0	0	0	49,500	5,468	54,968
2764	1	0	0	0	0	49,500	5,468	54,968
2782	1	0	0	0	0	49,500	5,468	54,968
2788	1	0	0	0	0	49,500	5,468	54,968
2800	1	0	0	0	0	49,500	5,468	54,968
2805	1	0	0	0	0	49,500	5,468	54,968
2806	1	0	0	0	0	49,500	5,468	54,968
2808	1	0	0	0	0	49,500	5,468	54,968
2812	1	0	0	0	0	49,500	5,468	54,968
2823	1	0	0	0	0	49,500	5,468	54,968
2834	1	0	0	0	0	49,500	5,468	54,968
2879	3	0	0	0	0	49,500	5,468	54,968
2880	1	0	0	0	0	49,500	5,468	54,968
2883	5	0	0	0	0	49,500	16,136	65,636
2888	1	0	0	0	0	49,500	5,468	54,968
2935	1	0	0	0	0	49,500	5,468	54,968
2936	2	0	0	0	0	49,500	5,468	54,968
2944	2	0	0	0	0	49,500	5,468	54,968

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 3: 2,001 TO 4,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
2959	1	0	0	0	0	49,500	5,468	54,968
2965	1	0	0	0	0	49,500	5,468	54,968
2969	1	0	0	0	0	49,500	5,468	54,968
2977	2	0	0	0	0	49,500	5,468	54,968
2978	1	0	0	0	0	49,500	5,468	54,968
2980	1	0	0	0	0	49,500	5,468	54,968
3026	1	0	0	0	0	49,500	5,468	54,968
3028	4	0	0	0	0	49,500	8,068	57,568
3033	1	0	0	0	0	49,500	5,468	54,968
3039	1	0	0	0	0	49,500	5,468	54,968
3045	1	0	0	0	0	49,500	5,468	54,968
3046	1	0	0	0	0	49,500	5,468	54,968
3053	1	0	0	0	0	49,500	5,468	54,968
3067	1	0	0	0	0	49,500	5,468	54,968
3071	4	0	0	0	0	49,500	8,068	57,568
3081	1	0	0	0	0	49,500	5,468	54,968
3092	2	0	0	0	0	49,500	5,468	54,968
3140	1	0	0	0	0	49,500	5,468	54,968
3141	2	0	0	0	0	49,500	5,468	54,968
3161	3	0	0	0	0	49,500	5,468	54,968
3175	1	0	0	0	0	49,500	5,468	54,968
3239	0	2	0	0	0	49,500	47,220	96,720
3243	2	0	0	0	0	49,500	5,468	54,968
3248	11	0	0	0	0	49,500	24,204	73,704
3279	16	0	0	0	0	49,500	23,192	72,692
3280	1	0	0	0	0	49,500	5,468	54,968
3299	1	0	0	0	0	49,500	5,468	54,968
3363	2	0	0	0	0	49,500	5,468	54,968
3372	3	0	0	0	0	49,500	5,468	54,968
3414	1	0	0	0	0	49,500	5,468	54,968
3646	1	0	0	0	0	49,500	5,468	54,968
3649	1	0	0	0	0	49,500	5,468	54,968
3751	1	0	0	0	0	49,500	5,468	54,968
3757	1	0	0	0	0	49,500	5,468	54,968
3776	5	0	0	0	0	49,500	16,136	65,636
3797	1	0	0	0	0	49,500	5,468	54,968
3798	2	0	0	0	0	49,500	5,468	54,968
3813	2	0	0	0	0	49,500	5,468	54,968
3818	1	0	0	0	0	49,500	5,468	54,968
3835	2	0	0	0	0	49,500	5,468	54,968
3857	2	0	0	0	0	49,500	5,468	54,968
3868	1	0	0	0	0	49,500	5,468	54,968
3871	2	0	0	0	0	49,500	5,468	54,968
3872	1	0	0	0	0	49,500	5,468	54,968
3877	2	0	0	0	0	49,500	5,468	54,968
3878	2	0	0	0	0	49,500	5,468	54,968
3879	2	0	0	0	0	49,500	5,468	54,968
3884	2	0	0	0	0	49,500	5,468	54,968

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 3: 2,001 TO 4,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
3896	1	0	0	0	0	49,500	5,468	54,968
3897	4	0	0	0	0	49,500	8,068	57,568
3904	1	0	0	0	0	49,500	5,468	54,968
3908	1	0	0	0	0	49,500	5,468	54,968
3924	1	0	0	0	0	49,500	5,468	54,968
3955	2	0	0	0	0	49,500	5,468	54,968
3956	1	0	0	0	0	49,500	5,468	54,968
3961	1	0	0	0	0	49,500	5,468	54,968
3967	3	0	0	0	0	49,500	5,468	54,968
3985	2	0	0	0	0	49,500	5,468	54,968
3986	1	0	0	0	0	49,500	5,468	54,968
3987	5	0	0	0	0	49,500	16,136	65,636
4005	2	0	0	0	0	49,500	5,468	54,968
4006	1	0	0	0	0	49,500	5,468	54,968
4009	1	0	0	0	0	49,500	5,468	54,968
4010	7	0	0	0	0	49,500	16,136	65,636
4013	1	0	0	0	0	49,500	5,468	54,968
4014	2	0	0	0	0	49,500	5,468	54,968
4016	6	0	0	0	0	49,500	16,136	65,636
4017	3	0	0	0	0	49,500	5,468	54,968
4026	1	0	0	0	0	49,500	5,468	54,968
4028	1	0	0	0	0	49,500	5,468	54,968
4036	1	0	0	0	0	49,500	5,468	54,968
4049	19	6	0	0	0	49,500	90,409	139,909
4050	2	0	0	0	0	49,500	5,468	54,968
4051	6	0	0	0	0	49,500	16,136	65,636
4069	2	0	0	0	0	49,500	5,468	54,968
4080	2	0	0	0	0	49,500	5,468	54,968
4094	2	0	0	0	0	49,500	5,468	54,968
4095	1	0	0	0	0	49,500	5,468	54,968
4102	2	0	0	0	0	49,500	5,468	54,968
4103	1	0	0	0	0	49,500	5,468	54,968
4104	2	0	0	0	0	49,500	5,468	54,968
4136	1	0	0	0	0	49,500	5,468	54,968
4139	1	0	0	0	0	49,500	5,468	54,968
4154	2	0	0	0	0	49,500	5,468	54,968
4155	3	0	0	0	0	49,500	5,468	54,968
4172	1	0	0	0	0	49,500	5,468	54,968
4175	1	0	0	0	0	49,500	5,468	54,968
4190	1	0	0	0	0	49,500	5,468	54,968
4195	2	0	0	0	0	49,500	5,468	54,968
4210	1	0	0	0	0	49,500	5,468	54,968
4214	3	0	0	0	0	49,500	5,468	54,968
4217	1	0	0	0	0	49,500	5,468	54,968
4218	1	0	0	0	0	49,500	5,468	54,968
4219	169	35	0	0	0	49,500	241,745	291,245
4220	38	0	0	0	0	49,500	47,794	97,294
4232	1	0	0	0	0	49,500	5,468	54,968

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 3: 2,001 TO 4,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
4239	1	0	0	0	0	49,500	5,468	54,968
4245	4	0	0	0	0	49,500	8,068	57,568
4246	4	0	0	0	0	49,500	8,068	57,568
4249	1	0	0	0	0	49,500	5,468	54,968
4265	1	0	0	0	0	49,500	5,468	54,968
4276	1	0	0	0	0	49,500	5,468	54,968
4279	1	0	0	0	0	49,500	5,468	54,968
4280	1	0	0	0	0	49,500	5,468	54,968
4281	1	0	0	0	0	49,500	5,468	54,968
4284	1	0	0	0	0	49,500	5,468	54,968
4286	2	0	0	0	0	49,500	5,468	54,968
4289	10	0	0	0	0	49,500	24,204	73,704
4292	1	0	0	0	0	49,500	5,468	54,968
4293	1	0	0	0	0	49,500	5,468	54,968
4298	1	0	0	0	0	49,500	5,468	54,968
4306	1	0	0	0	0	49,500	5,468	54,968
4311	2	0	0	0	0	49,500	5,468	54,968
4313	1	0	0	0	0	49,500	5,468	54,968
4317	1	0	0	0	0	49,500	5,468	54,968
4327	3	0	0	0	0	49,500	5,468	54,968
4334	1	0	0	0	0	49,500	5,468	54,968
4352	1	0	0	0	0	49,500	5,468	54,968
4355	1	0	0	0	0	49,500	5,468	54,968
4360	4	0	0	0	0	49,500	8,068	57,568
4368	1	0	0	0	0	49,500	5,468	54,968
4371	1	0	0	0	0	49,500	5,468	54,968
4372	4	0	0	0	0	49,500	8,068	57,568
4373	1	0	0	0	0	49,500	5,468	54,968
4384	9	0	0	0	0	49,500	24,204	73,704
4385	2	0	0	0	0	49,500	5,468	54,968
4388	1	0	0	0	0	49,500	5,468	54,968
4389	1	0	0	0	0	49,500	5,468	54,968
4394	2	0	0	0	0	49,500	5,468	54,968
4429	2	0	0	0	0	49,500	5,468	54,968
4433	1	0	0	0	0	49,500	5,468	54,968
4434	1	0	0	0	0	49,500	5,468	54,968
4459	1	0	0	0	0	49,500	5,468	54,968
4461	1	0	0	0	0	49,500	5,468	54,968
4462	12	0	0	0	0	49,500	24,204	73,704
4463	1	0	0	0	0	49,500	5,468	54,968
4493	4	0	0	0	0	49,500	8,068	57,568
4494	36	3	0	0	0	49,500	97,009	146,509
4505	2	0	0	0	0	49,500	5,468	54,968
4506	8	0	0	0	0	49,500	16,136	65,636
4510	1	0	0	0	0	49,500	5,468	54,968
4516	1	0	0	0	0	49,500	5,468	54,968
4517	5	0	0	0	0	49,500	16,136	65,636
4534	1	0	0	0	0	49,500	5,468	54,968

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 3: 2,001 TO 4,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4540	3	0	0	0	0	49,500	5,468	54,968
4542	1	0	0	0	0	49,500	5,468	54,968
4543	3	0	0	0	0	49,500	5,468	54,968
4544	2	0	0	0	0	49,500	5,468	54,968
4545	3	0	0	0	0	49,500	5,468	54,968
4549	1	0	0	0	0	49,500	5,468	54,968
4550	2	0	0	0	0	49,500	5,468	54,968
4581	1	0	0	0	0	49,500	5,468	54,968
4589	1	0	0	0	0	49,500	5,468	54,968
4592	1	0	0	0	0	49,500	5,468	54,968
4607	14	1	0	0	0	49,500	47,472	96,972
4608	2	0	0	0	0	49,500	5,468	54,968
4609	1	0	0	0	0	49,500	5,468	54,968
4615	3	0	0	0	0	49,500	5,468	54,968
4616	2	0	0	0	0	49,500	5,468	54,968
4617	4	0	0	0	0	49,500	8,068	57,568
4621	1	0	0	0	0	49,500	5,468	54,968
4622	1	0	0	0	0	49,500	5,468	54,968
4624	1	0	0	0	0	49,500	5,468	54,968
4625	0	0	0	0	0	49,500	0	49,500
4626	1	0	0	0	0	49,500	5,468	54,968
4627	5	0	0	0	0	49,500	16,136	65,636
4628	1	0	0	0	0	49,500	5,468	54,968
4629	1	0	0	0	0	49,500	5,468	54,968
4638	3	0	0	0	0	49,500	5,468	54,968
4640	1	0	0	0	0	49,500	5,468	54,968
4641	1	0	0	0	0	49,500	5,468	54,968
4650	1	0	0	0	0	49,500	5,468	54,968
4651	1	0	0	0	0	49,500	5,468	54,968
4654	1	0	0	0	0	49,500	5,468	54,968
4656	1	0	0	0	0	49,500	5,468	54,968
4657	3	0	0	0	0	49,500	5,468	54,968
4660	1	0	0	0	0	49,500	5,468	54,968
4661	1	0	0	0	0	49,500	5,468	54,968
4666	2	0	0	0	0	49,500	5,468	54,968
4667	0	0	0	0	0	49,500	0	49,500
4668	1	0	0	0	0	49,500	5,468	54,968
4669	0	0	0	0	0	49,500	0	49,500
4670	1	0	0	0	0	49,500	5,468	54,968
4672	2	0	0	0	0	49,500	5,468	54,968
4673	1	0	0	0	0	49,500	5,468	54,968
4674	0	0	0	0	0	49,500	0	49,500
4675	2	0	0	0	0	49,500	5,468	54,968
4681	1	0	0	0	0	49,500	5,468	54,968
4686	2	0	0	0	0	49,500	5,468	54,968
4687	1	0	0	0	0	49,500	5,468	54,968
4688	28	2	0	0	0	49,500	52,386	101,886
4690	1	0	0	0	0	49,500	5,468	54,968

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 3: 2,001 TO 4,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4694	1	0	0	0	0	49,500	5,468	54,968
4701	3	0	0	0	0	49,500	5,468	54,968
4703	1	0	0	0	0	49,500	5,468	54,968
4708	2	0	0	0	0	49,500	5,468	54,968
4709	2	0	0	0	0	49,500	5,468	54,968
4711	2	0	0	0	0	49,500	5,468	54,968
4712	1	0	0	0	0	49,500	5,468	54,968
4714	1	0	0	0	0	49,500	5,468	54,968
4719	1	0	0	0	0	49,500	5,468	54,968
4729	1	0	0	0	0	49,500	5,468	54,968
4732	2	0	0	0	0	49,500	5,468	54,968
4733	1	0	0	0	0	49,500	5,468	54,968
4734	2	0	0	0	0	49,500	5,468	54,968
4735	3	0	0	0	0	49,500	5,468	54,968
4742	3	0	0	0	0	49,500	5,468	54,968
4743	1	0	0	0	0	49,500	5,468	54,968
4747	4	0	0	0	0	49,500	8,068	57,568
4749	1	0	0	0	0	49,500	5,468	54,968
4755	1	0	0	0	0	49,500	5,468	54,968
4756	3	0	0	0	0	49,500	5,468	54,968
4758	1	0	0	0	0	49,500	5,468	54,968
4763	16	0	0	0	0	49,500	23,192	72,692
4792	1	0	0	0	0	49,500	5,468	54,968
4795	1	0	0	0	0	49,500	5,468	54,968
4797	2	0	0	0	0	49,500	5,468	54,968
4812	3	0	0	0	0	49,500	5,468	54,968
4816	20	1	0	0	0	49,500	48,210	97,710
4817	38	2	13	3	0	49,500	775,469	824,969
4827	4	0	0	0	0	49,500	8,068	57,568
4833	1	0	0	0	0	49,500	5,468	54,968
4834	1	0	0	0	0	49,500	5,468	54,968
4840	1	0	0	0	0	49,500	5,468	54,968
4841	1	0	0	0	0	49,500	5,468	54,968
4842	3	0	0	0	0	49,500	5,468	54,968
4843	2	0	0	0	0	49,500	5,468	54,968
4846	1	0	0	0	0	49,500	5,468	54,968
4849	1	0	0	0	0	49,500	5,468	54,968
4850	2	0	0	0	0	49,500	5,468	54,968
4855	10	0	0	0	0	49,500	24,204	73,704
4857	2	0	0	0	0	49,500	5,468	54,968
4858	1	0	0	0	0	49,500	5,468	54,968
4862	1	0	0	0	0	49,500	5,468	54,968
4864	2	0	0	0	0	49,500	5,468	54,968
4866	1	0	0	0	0	49,500	5,468	54,968
4870	8	0	0	0	0	49,500	16,136	65,636
4872	1	0	0	0	0	49,500	5,468	54,968
4873	1	0	0	0	0	49,500	5,468	54,968
4874	1	0	0	0	0	49,500	5,468	54,968

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 3: 2,001 TO 4,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
4875	1	0	0	0	0	49,500	5,468	54,968
4876	2	0	0	0	0	49,500	5,468	54,968
4879	2	0	0	0	0	49,500	5,468	54,968
4880	1	0	0	0	0	49,500	5,468	54,968
4881	1	0	0	0	0	49,500	5,468	54,968
4882	2	0	0	0	0	49,500	5,468	54,968
4883	1	0	0	0	0	49,500	5,468	54,968
4884	2	0	0	0	0	49,500	5,468	54,968
4885	3	0	0	0	0	49,500	5,468	54,968
4886	1	0	0	0	0	49,500	5,468	54,968
4887	2	0	0	0	0	49,500	5,468	54,968
4888	1	0	0	0	0	49,500	5,468	54,968
4889	2	0	0	0	0	49,500	5,468	54,968
4890	1	0	0	0	0	49,500	5,468	54,968
4891	1	0	0	0	0	49,500	5,468	54,968
4895	1	0	0	0	0	49,500	5,468	54,968
4896	1	0	0	0	0	49,500	5,468	54,968
4898	3	0	0	0	0	49,500	5,468	54,968
4900	2	0	0	0	0	49,500	5,468	54,968
4901	1	0	0	0	0	49,500	5,468	54,968
4902	2	0	0	0	0	49,500	5,468	54,968
4903	3	0	0	0	0	49,500	5,468	54,968
4905	1	0	0	0	0	49,500	5,468	54,968
4907	52	5	0	0	0	49,500	96,280	145,780
4908	1	0	0	0	0	49,500	5,468	54,968
4909	4	0	0	0	0	49,500	8,068	57,568
4910	49	1	0	0	0	49,500	54,114	103,614
4913	2	0	0	0	0	49,500	5,468	54,968
4914	1	0	0	0	0	49,500	5,468	54,968
4919	1	0	0	0	0	49,500	5,468	54,968
4920	1	0	0	0	0	49,500	5,468	54,968
4921	1	0	0	0	0	49,500	5,468	54,968
4922	2	0	0	0	0	49,500	5,468	54,968
4923	1	0	0	0	0	49,500	5,468	54,968
4959	1	0	0	0	0	49,500	5,468	54,968
4968	2	0	0	0	0	49,500	5,468	54,968
4973	2	0	0	0	0	49,500	5,468	54,968
4975	1	0	0	0	0	49,500	5,468	54,968
4976	2	0	0	0	0	49,500	5,468	54,968
4978	1	0	0	0	0	49,500	5,468	54,968
4979	1	0	0	0	0	49,500	5,468	54,968
4983	1	0	0	0	0	49,500	5,468	54,968
5002	4	0	0	0	0	49,500	8,068	57,568
5010	2	0	0	0	0	49,500	5,468	54,968
5013	3	0	0	0	0	49,500	5,468	54,968
5014	1	0	0	0	0	49,500	5,468	54,968
5015	1	0	0	0	0	49,500	5,468	54,968
5016	2	0	0	0	0	49,500	5,468	54,968

[illegible]

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
2532	1	0	0	0	0	73,788	5,468	79,256
2536	1	0	0	0	0	73,788	5,468	79,256
2539	1	0	0	0	0	73,788	5,468	79,256
2541	1	0	0	0	0	73,788	5,468	79,256
2542	4	0	0	0	0	73,788	8,068	81,856
2543	1	0	0	0	0	73,788	5,468	79,256
2544	0	1	0	0	0	73,788	44,520	118,308
2545	1	0	0	0	0	73,788	5,468	79,256
2546	1	0	0	0	0	73,788	5,468	79,256
2548	1	0	0	0	0	73,788	5,468	79,256
2567	1	0	0	0	0	73,788	5,468	79,256
2571	12	0	0	0	0	73,788	24,204	97,992
2572	2	0	0	0	0	73,788	5,468	79,256
2573	1	0	0	0	0	73,788	5,468	79,256
2574	8	0	0	0	0	73,788	16,136	89,924
2575	4	0	0	0	0	73,788	8,068	81,856
2586	2	0	0	0	0	73,788	5,468	79,256
2587	1	0	0	0	0	73,788	5,468	79,256
2588	37	4	0	0	0	73,788	66,792	140,580
2589	48	2	0	0	0	73,788	76,283	150,071
2590	93	31	0	0	0	73,788	177,397	251,185
2591	1	0	0	0	0	73,788	5,468	79,256
2592	1	0	0	0	0	73,788	5,468	79,256
2596	2	0	0	0	0	73,788	5,468	79,256
2598	1	0	0	0	0	73,788	5,468	79,256
2599	1	0	0	0	0	73,788	5,468	79,256
2600	2	0	0	0	0	73,788	5,468	79,256
2602	2	0	0	0	0	73,788	5,468	79,256
2603	1	0	0	0	0	73,788	5,468	79,256
2604	2	0	0	0	0	73,788	5,468	79,256
2605	2	0	0	0	0	73,788	5,468	79,256
2610	1	0	0	0	0	73,788	5,468	79,256
2616	1	0	0	0	0	73,788	5,468	79,256
2617	1	0	0	0	0	73,788	5,468	79,256
2652	2	0	0	0	0	73,788	5,468	79,256
2658	1	0	0	0	0	73,788	5,468	79,256
2661	2	0	0	0	0	73,788	5,468	79,256
2668	1	0	0	0	0	73,788	5,468	79,256
2679	2	0	0	0	0	73,788	5,468	79,256
2689	2	0	0	0	0	73,788	5,468	79,256
2690	1	0	0	0	0	73,788	5,468	79,256
2691	1	0	0	0	0	73,788	5,468	79,256
2695	1	0	0	0	0	73,788	5,468	79,256
2709	1	0	0	0	0	73,788	5,468	79,256
2714	2	0	0	0	0	73,788	5,468	79,256
2715	1	0	0	0	0	73,788	5,468	79,256
2717	1	0	0	0	0	73,788	5,468	79,256
2719	1	0	0	0	0	73,788	5,468	79,256

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
2723	1	0	0	0	0	73,788	5,468	79,256
2747	1	0	0	0	0	73,788	5,468	79,256
2757	1	0	0	0	0	73,788	5,468	79,256
2773	1	0	0	0	0	73,788	5,468	79,256
2774	4	0	0	0	0	73,788	8,068	81,856
2775	1	0	0	0	0	73,788	5,468	79,256
2776	1	0	0	0	0	73,788	5,468	79,256
2777	1	0	0	0	0	73,788	5,468	79,256
2778	1	0	0	0	0	73,788	5,468	79,256
2779	2	0	0	0	0	73,788	5,468	79,256
2780	4	0	0	0	0	73,788	8,068	81,856
2783	2	0	0	0	0	73,788	5,468	79,256
2785	7	0	0	0	0	73,788	16,136	89,924
2787	2	0	0	0	0	73,788	5,468	79,256
2791	1	0	0	0	0	73,788	5,468	79,256
2792	1	0	0	0	0	73,788	5,468	79,256
2793	1	0	0	0	0	73,788	5,468	79,256
2802	3	0	0	0	0	73,788	5,468	79,256
2814	4	0	0	0	0	73,788	8,068	81,856
2815	1	0	0	0	0	73,788	5,468	79,256
2821	1	0	0	0	0	73,788	5,468	79,256
2822	1	0	0	0	0	73,788	5,468	79,256
2857	1	0	0	0	0	73,788	5,468	79,256
2858	1	0	0	0	0	73,788	5,468	79,256
2859	1	0	0	0	0	73,788	5,468	79,256
2863	1	0	0	0	0	73,788	5,468	79,256
2865	1	0	0	0	0	73,788	5,468	79,256
2876	1	0	0	0	0	73,788	5,468	79,256
2877	3	0	0	0	0	73,788	5,468	79,256
2878	1	0	0	0	0	73,788	5,468	79,256
2892	1	0	0	0	0	73,788	5,468	79,256
2909	2	0	0	0	0	73,788	5,468	79,256
2910	4	0	0	0	0	73,788	8,068	81,856
2918	3	0	0	0	0	73,788	5,468	79,256
2954	1	0	0	0	0	73,788	5,468	79,256
2966	1	0	0	0	0	73,788	5,468	79,256
2967	1	0	0	0	0	73,788	5,468	79,256
2968	3	0	0	0	0	73,788	5,468	79,256
2975	1	0	0	0	0	73,788	5,468	79,256
2983	3	0	0	0	0	73,788	5,468	79,256
2986	2	0	0	0	0	73,788	5,468	79,256
2987	2	0	0	0	0	73,788	5,468	79,256
2995	3	0	0	0	0	73,788	5,468	79,256
3001	1	0	0	0	0	73,788	5,468	79,256
3005	4	0	0	0	0	73,788	8,068	81,856
3010	1	0	0	0	0	73,788	5,468	79,256
3011	2	0	0	0	0	73,788	5,468	79,256
3036	2	0	0	0	0	73,788	5,468	79,256

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
3126	4	0	0	0	0	73,788	8,068	81,856
3127	3	0	0	0	0	73,788	5,468	79,256
3130	1	0	0	0	0	73,788	5,468	79,256
3134	8	2	0	0	0	73,788	48,696	122,484
3182	1	0	0	0	0	73,788	5,468	79,256
3207	1	0	0	0	0	73,788	5,468	79,256
3218	1	0	0	0	0	73,788	5,468	79,256
3244	1	0	0	0	0	73,788	5,468	79,256
3246	1	0	0	0	0	73,788	5,468	79,256
3276	3	0	0	0	0	73,788	5,468	79,256
3309	2	0	0	0	0	73,788	5,468	79,256
3375	2	0	0	0	0	73,788	5,468	79,256
3378	1	0	0	0	0	73,788	5,468	79,256
3426	2	0	0	0	0	73,788	5,468	79,256
3752	3	0	0	0	0	73,788	5,468	79,256
3760	1	0	0	0	0	73,788	5,468	79,256
3826	2	0	0	0	0	73,788	5,468	79,256
3856	1	0	0	0	0	73,788	5,468	79,256
3867	2	0	0	0	0	73,788	5,468	79,256
3901	3	0	0	0	0	73,788	5,468	79,256
3902	1	0	0	0	0	73,788	5,468	79,256
3903	4	0	0	0	0	73,788	8,068	81,856
3906	1	0	0	0	0	73,788	5,468	79,256
3923	1	0	0	0	0	73,788	5,468	79,256
3925	1	0	0	0	0	73,788	5,468	79,256
3937	1	0	0	0	0	73,788	5,468	79,256
4038	2	0	0	0	0	73,788	5,468	79,256
4054	2	0	0	0	0	73,788	5,468	79,256
4057	1	0	0	0	0	73,788	5,468	79,256
4062	6	0	0	0	0	73,788	16,136	89,924
4065	1	0	0	0	0	73,788	5,468	79,256
4066	4	0	0	0	0	73,788	8,068	81,856
4067	1	0	0	0	0	73,788	5,468	79,256
4068	1	0	0	0	0	73,788	5,468	79,256
4070	1	0	0	0	0	73,788	5,468	79,256
4073	1	0	0	0	0	73,788	5,468	79,256
4074	1	1	0	0	0	73,788	45,258	119,046
4075	6	0	0	0	0	73,788	16,136	89,924
4076	6	0	0	0	0	73,788	16,136	89,924
4079	1	0	0	0	0	73,788	5,468	79,256
4081	1	0	0	0	0	73,788	5,468	79,256
4096	1	0	0	0	0	73,788	5,468	79,256
4098	2	0	0	0	0	73,788	5,468	79,256
4101	2	0	0	0	0	73,788	5,468	79,256
4107	1	0	0	0	0	73,788	5,468	79,256
4121	1	0	0	0	0	73,788	5,468	79,256
4122	1	0	0	0	0	73,788	5,468	79,256
4125	3	0	0	0	0	73,788	5,468	79,256

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4128	1	0	0	0	0	73,788	5,468	79,256
4129	1	0	0	0	0	73,788	5,468	79,256
4146	2	0	0	0	0	73,788	5,468	79,256
4148	1	0	0	0	0	73,788	5,468	79,256
4149	1	0	0	0	0	73,788	5,468	79,256
4150	1	0	0	0	0	73,788	5,468	79,256
4162	1	0	0	0	0	73,788	5,468	79,256
4169	2	0	0	0	0	73,788	5,468	79,256
4182	9	0	0	0	0	73,788	24,204	97,992
4189	1	0	0	0	0	73,788	5,468	79,256
4198	1	0	0	0	0	73,788	5,468	79,256
4202	2	0	0	0	0	73,788	5,468	79,256
4221	1	0	0	0	0	73,788	5,468	79,256
4222	1	0	0	0	0	73,788	5,468	79,256
4240	2	0	0	0	0	73,788	5,468	79,256
4241	1	0	0	0	0	73,788	5,468	79,256
4242	1	0	0	0	0	73,788	5,468	79,256
4255	1	0	0	0	0	73,788	5,468	79,256
4277	2	0	0	0	0	73,788	5,468	79,256
4285	2	0	0	0	0	73,788	5,468	79,256
4287	1	0	0	0	0	73,788	5,468	79,256
4288	1	0	0	0	0	73,788	5,468	79,256
4290	1	0	0	0	0	73,788	5,468	79,256
4294	1	0	0	0	0	73,788	5,468	79,256
4307	6	0	0	0	0	73,788	16,136	89,924
4308	1	0	0	0	0	73,788	5,468	79,256
4321	1	0	0	0	0	73,788	5,468	79,256
4326	1	0	0	0	0	73,788	5,468	79,256
4374	1	0	0	0	0	73,788	5,468	79,256
4381	1	0	0	0	0	73,788	5,468	79,256
4395	1	0	0	0	0	73,788	5,468	79,256
4398	6	0	0	0	0	73,788	16,136	89,924
4405	2	0	0	0	0	73,788	5,468	79,256
4406	1	0	0	0	0	73,788	5,468	79,256
4415	1	0	0	0	0	73,788	5,468	79,256
4424	2	0	0	0	0	73,788	5,468	79,256
4430	1	0	0	0	0	73,788	5,468	79,256
4448	1	0	0	0	0	73,788	5,468	79,256
4460	2	0	0	0	0	73,788	5,468	79,256
4474	1	0	0	0	0	73,788	5,468	79,256
4478	1	0	0	0	0	73,788	5,468	79,256
4479	1	0	0	0	0	73,788	5,468	79,256
4499	1	0	0	0	0	73,788	5,468	79,256
4514	1	0	0	0	0	73,788	5,468	79,256
4515	2	0	0	0	0	73,788	5,468	79,256
4519	1	0	0	0	0	73,788	5,468	79,256
4526	1	0	0	0	0	73,788	5,468	79,256
4527	1	0	0	0	0	73,788	5,468	79,256

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION ID	DS1	DS3	OC-3	OC-12	OC-48	PATH COST	EQPT COST	TOTAL COST
4551	1	0	0	0	0	73,788	5,468	79,256
4555	1	0	0	0	0	73,788	5,468	79,256
4557	1	0	0	0	0	73,788	5,468	79,256
4560	1	0	0	0	0	73,788	5,468	79,256
4567	1	0	0	0	0	73,788	5,468	79,256
4576	3	0	0	0	0	73,788	5,468	79,256
4577	4	0	0	0	0	73,788	8,068	81,856
4580	2	0	0	0	0	73,788	5,468	79,256
4583	2	0	0	0	0	73,788	5,468	79,256
4585	2	0	0	0	0	73,788	5,468	79,256
4595	1	0	0	0	0	73,788	5,468	79,256
4604	1	0	0	0	0	73,788	5,468	79,256
4618	1	0	0	0	0	73,788	5,468	79,256
4619	1	0	0	0	0	73,788	5,468	79,256
4633	2	0	0	0	0	73,788	5,468	79,256
4642	1	0	0	0	0	73,788	5,468	79,256
4696	1	0	0	0	0	73,788	5,468	79,256
4697	1	0	0	0	0	73,788	5,468	79,256
4698	1	0	0	0	0	73,788	5,468	79,256
4715	2	0	0	0	0	73,788	5,468	79,256
4716	1	0	0	0	0	73,788	5,468	79,256
4723	1	0	0	0	0	73,788	5,468	79,256
4750	1	0	0	0	0	73,788	5,468	79,256
4751	1	0	0	0	0	73,788	5,468	79,256
4757	4	0	0	0	0	73,788	8,068	81,856
4764	1	0	0	0	0	73,788	5,468	79,256
4765	4	0	0	0	0	73,788	8,068	81,856
4766	1	0	0	0	0	73,788	5,468	79,256
4767	52	5	0	0	0	73,788	96,280	170,068
4769	1	0	0	0	0	73,788	5,468	79,256
4770	1	0	0	0	0	73,788	5,468	79,256
4772	1	0	0	0	0	73,788	5,468	79,256
4776	1	0	0	0	0	73,788	5,468	79,256
4777	1	0	0	0	0	73,788	5,468	79,256
4780	4	0	0	0	0	73,788	8,068	81,856
4782	1	0	0	0	0	73,788	5,468	79,256
4784	1	0	0	0	0	73,788	5,468	79,256
4793	1	0	0	0	0	73,788	5,468	79,256
4814	3	0	0	0	0	73,788	5,468	79,256
4815	2	0	0	0	0	73,788	5,468	79,256
4828	1	0	0	0	0	73,788	5,468	79,256
4832	1	0	0	0	0	73,788	5,468	79,256
4853	1	0	0	0	0	73,788	5,468	79,256
4854	3	0	0	0	0	73,788	5,468	79,256
4859	2	0	0	0	0	73,788	5,468	79,256
4860	1	0	0	0	0	73,788	5,468	79,256
4861	1	0	0	0	0	73,788	5,468	79,256
4865	1	0	0	0	0	73,788	5,468	79,256

Seattle Fiber Study
Cost Model - Competitive Access Providers
Developed by POWER Engineers, Inc. for US WEST Communications

DISTANCE BAND 4: 4,001 TO 9,000 FT FROM NEAREST CAP FIBER ROUTE								
LOCATION	DS1	DS3	OC-3	OC-12	OC-48	PATH	EQPT	TOTAL
ID						COST	COST	COST
4892	0	2	0	0	0	73,788	47,220	121,008
4897	1	0	0	0	0	73,788	5,468	79,256
4906	1	0	0	0	0	73,788	5,468	79,256
4911	1	0	0	0	0	73,788	5,468	79,256
4917	2	0	0	0	0	73,788	5,468	79,256
4918	4	0	0	0	0	73,788	8,068	81,856
4925	3	1	0	0	0	73,788	45,258	119,046
4927	1	0	0	0	0	73,788	5,468	79,256
4928	3	0	0	0	0	73,788	5,468	79,256
4929	2	0	0	0	0	73,788	5,468	79,256
4931	1	0	0	0	0	73,788	5,468	79,256
4932	1	0	0	0	0	73,788	5,468	79,256
4933	1	0	0	0	0	73,788	5,468	79,256
4934	1	0	0	0	0	73,788	5,468	79,256
4935	1	0	0	0	0	73,788	5,468	79,256
4936	1	0	0	0	0	73,788	5,468	79,256
4939	1	0	0	0	0	73,788	5,468	79,256
4943	1	0	0	0	0	73,788	5,468	79,256
4944	2	0	0	0	0	73,788	5,468	79,256
4946	1	0	0	0	0	73,788	5,468	79,256
4947	2	0	0	0	0	73,788	5,468	79,256
4951	1	0	0	0	0	73,788	5,468	79,256
4956	1	0	0	0	0	73,788	5,468	79,256
4960	1	0	0	0	0	73,788	5,468	79,256
4961	1	0	0	0	0	73,788	5,468	79,256
4964	2	0	0	0	0	73,788	5,468	79,256
4965	1	0	0	0	0	73,788	5,468	79,256
4969	1	0	0	0	0	73,788	5,468	79,256
4971	2	0	0	0	0	73,788	5,468	79,256
4977	2	0	0	0	0	73,788	5,468	79,256
4985	2	0	0	0	0	73,788	5,468	79,256
4986	2	0	0	0	0	73,788	5,468	79,256
4990	2	0	0	0	0	73,788	5,468	79,256
4991	4	0	0	0	0	73,788	8,068	81,856
4992	3	0	0	0	0	73,788	5,468	79,256
4993	47	6	0	0	0	73,788	115,716	189,504
4994	1	0	0	0	0	73,788	5,468	79,256
4995	2	0	0	0	0	73,788	5,468	79,256
4996	1	0	0	0	0	73,788	5,468	79,256
4997	2	0	0	0	0	73,788	5,468	79,256
4998	1	0	0	0	0	73,788	5,468	79,256
4999	2	0	0	0	0	73,788	5,468	79,256
5009	2	0	0	0	0	73,788	5,468	79,256
5018	4	0	0	0	0	73,788	8,068	81,856
5019	1	0	0	0	0	73,788	5,468	79,256
5020	1	0	0	0	0	73,788	5,468	79,256
5022	1	0	0	0	0	73,788	5,468	79,256
5023	2	0	0	0	0	73,788	5,468	79,256

Developed by POWER Engineers, Inc. for US WEST Communications

819	58	0	0	0
-----	----	---	---	---

APPENDIX

E. Qualifications for POWER Engineers, Inc.

POWER Engineers, Inc. is a company qualified to complete engineering and related work in the communications environment. The communications engineering division is also supported with expertise in all the professional engineering disciplines and a complete, state of the art GIS operations.

The following pages describe PEI in terms of a brief profile, communications lines of business, and a representative client list.

PROFILE

POWER ENGINEERS, INC.

POWER Engineers, Inc. (PEI) is a consulting engineering firm headquartered in Idaho with offices located throughout the United States and overseas. Since its beginning over 20 years ago, PEI has grown from a staff of three to a firm which now employs over 400. Through growth and diversification, PEI has become a multidisciplinary consulting firm specializing in many technical areas. PEI's full-service capabilities provide integrated services from preliminary planning stages through construction and close-out. Its professional staff includes engineers in the following disciplines.

- Project Management
- Communications
- Mechanical
- Electrical
- Geotechnical
- Controls
- Combustion
- SCADA
- Structural / Architectural
- Civil
- Petroleum
- Mining
- Environmental
- Thermography
- Training Development / Delivery

Staff and/or field office locations include:

- ♦ Phoenix, Arizona
- ♦ Denver, Colorado
- ♦ Atlanta, Georgia
- ♦ Boise, Idaho
- ♦ Hailey, Idaho
- ♦ St. Louis, Missouri
- ♦ Mindanao, The Philippines
- ♦ Portland, Oregon
- ♦ Longview, Washington
- ♦ Austin, Texas
- ♦ Dallas, Texas

PEI has been recognized as one of the top ten engineering consulting firms in the country by trade publications, i.e. "*Consulting-Specifying Engineer*".

POWER Engineers, Inc.

ICS DIVISION

LINES OF BUSINESS

- **TELEPHONY**
 - Traditional Outside Plant Planning & Design
(Copper, Fiber, SLE, etc.)
 - Data Base Administration
 - Records Management
- **BROADBAND PLANNING & DESIGN**
 - Video & Data Transport Systems
 - Energy Management Systems
(Distribution & Substation)
- **RF / CELLULAR / PCS**
 - Design
 - Site Acquisition
- **SYSTEMS DESIGN**
 - Inside Plant Design and Engineering
 - LAN/WAN Networks
 - SONET
- **GIS / GPS SERVICES**
 - Conversion
 - Analysis
 - Application Development
- **TRAINING DEVELOPMENT & DELIVERY**
 - Instructional Design
(Job Studies, Needs Assessment, etc.)
 - Interactive Multimedia
 - Computer Based Training (CBT)
 - Electronic Support Systems
 - OSP Engineering Training (instructors)
 - Construction / I&M Training (instructors)

POWER Engineers, Inc.

ICS DIVISION

REPRESENTATIVE CLIENT LIST

- AT&T
- Central & Southwest Utilities
- Citizens Telephone (& Utility)
- Cox Communications
- Custer Telephone (Independent)
- Fiberlink
- Jones Lightwave
- Lucent Technologies
- MCI
- Micron
- R&L Electronics
- TCI
- U S Government (Geological Survey)
- U S Sprint Communications Company
- U S West Communications

12/16/98
